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Summary and
Recommendations from the
Statistics Canada Workshop

Demographic Aspects of Vital Statistics: Fertility



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Demographic Aspects of Vital Statistics: Fertility

Summary and
Recommendations from the
Statistics Canada Workshop



Held in Ottawa
March, 1981

Prepared by

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FOREWORD

The Canadian vital statistics registration system constitutes a rich source of information on fertility, nuptiality and mortality. Complementary to the demographic information derived from the Census of Canada, these data provide annual measurements of the trends and levels of vital events in Canada. Such information is fundamental to the assessment of the current demographic profile of Canada and its projection into the future.

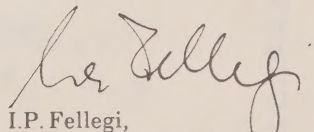
Though vital statistics data are extensively utilized, Statistics Canada is aware of some important gaps that exist in our information and knowledge which need to be addressed if the determinants and consequences of demographic change are to be fully understood.

To seek an academic perspective on one of the most important areas of vital statistics - demographic aspects of fertility - a workshop was sponsored by Statistics Canada in March, 1981.

This report summarizes the discussions and recommendations of the workshop. It reflects the views and contributions of participants on various aspects of fertility determinants, their measurement and the consequences of emerging fertility trends. The report includes a set of recommendations of the participants for the improvement of statistical information on fertility. It is hoped that the report will make a substantive contribution to the existing knowledge and continuing discussions of the statistical measurement and analysis of fertility in Canada.

I take this opportunity, on behalf of all participants, to thank Professor Jean Veevers for so ably summarizing the proceedings of the workshop and preparing the report. To all participants, without whose contribution this workshop would not have been possible, I extend our appreciation.

Although the report has been prepared at the request of, and published by Statistics Canada, the responsibility for the views, comments and conclusions is that of the author.



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TABLE OF CONTENTS

CHAPTER

	Page
I. THE FACT OF FERTILITY DECLINE: AN INTRODUCTION AND OVERVIEW	11
II. ASSESSING THE DETERMINANTS OF FERTILITY	17
Baby Boom to Baby Bust	17
Forecasting Fertility: Short Range and Long Range Views	18
The Easterlin Hypothesis	18
Hard Times - Soft Times: A Debate	22
Low Fertility is Here to Stay	23
The Decline of Differential Fertility	24
Determinants of Fertility: Quantitative and Qualitative	26
The Cultural Component of Fertility	28
Social-Psychological Variables	30
Women in the Work Force - Changing Meaning of Work	31
The Changing Nature of Marriage	36
The Changing Nature of Parenthood	37
III. SPECIFIC SUBSTANTIVE ISSUES	41
The Physical Control of Fertility	41
Access to Contraception	41
Availability of Abortion	42
Access to Sterilization	42
Sex Preference	43
The Achievement of Fertility Goals	43
The Fragility of Fertility Intentions	44
Unwanted Fertility	45
Voluntary Childlessness	46
Subfecundity	46
The Social Context of Fertility	47
Adolescent Fertility	47
Cohabitation	47
Availability of Housing	48
The Decline of Primary Marriages	48

TABLE OF CONTENTS - Continued

CHAPTER

	Page
IV.	GAPS IN THE DATA: WAYS AND MEANS OF MAXIMIZING AVAILABLE DATA 53
	Maximizing Vital Statistics Data 53
	Available Data 53
	Improving Available Data 54
	The Problems of Newfoundland 54
	The Problems of Quebec 55
	Time Intervals 55
	Illegitimacy 55
	Sociocultural Variables 56
	Male Fertility 56
	Exploiting Existing Data 57
	Record Linkage 57
	Mortality Data 57
	Occupational Data 58
	Family Allowance Data 58
	The Canada Health Survey 58
	Marriage Data 58
V.	GAPS IN THE DATA: WAYS AND MEANS OF GENERATING NEW DATA 61
	Expanding the Census 61
	The National Fertility Survey 62
	The General Purpose Survey 63
	Private Surveys 64
	Telephone Surveys 64
	The Labour Force Survey 65
VI.	SUMMARY OF RECOMMENDATIONS 71
	The Content of Future Fertility Research 71
	Working with Vital Statistics 73
	Generating Fertility Data 74

TABLE OF CONTENTS - Concluded

CHAPTER

	Page
VII. EPILOGUE: SOME SOCIAL POLICY ISSUES	79
Low Fertility and Replacement	79
The Aging of Canadian Society	79
Manipulating Fertility: The Politics of Natalism	80
Antinatalist Strategies	81
Pronatalist Strategies	81
Fertility and Social Policy	84
LIST OF PARTICIPANTS	86
SELECTED BIBLIOGRAPHY	90

CHAPTER ONE

THE FACT OF FERTILITY DECLINE: AN INTRODUCTION AND OVERVIEW

AN INTRODUCTION AND OVERVIEW

In the recent past, Canada has experienced two dramatic fluctuations in fertility. The upsurge in the birth rate following the Second World War, colloquially known as the baby boom, continued until the late 1950s. Since then, there has been a marked and unabated decline, a change of circumstances aptly termed the baby bust (Grindstaff, 1975). Moreover, since the early 1970s, Canadian fertility has actually fallen below the level of replacement. In other words, if the present birth rates continue for long in the future, and if there is no compensating immigration, the Canadian population will not only cease to grow, but will be reduced in size and considerably changed in composition. The decline in fertility is, and will remain, a "vital fact of our time" which is of prime concern not only to demographers and politicians, but to Canadians in general (Romaniuc). Cognizance of this situation led the Health Division of Statistics Canada to organize, in March 1981, a special Workshop on DEMOGRAPHIC ASPECTS OF VITAL STATISTICS: FERTILITY.

The role of Statistics Canada in the area of Canadian fertility, as defined by Dr. Martin Wilk, The Chief Statistician, is to assure the development of reliable and pertinent information, and to contribute to the research, analysis and interpretation of this information in response to public interest considerations. The general focus of the Workshop was on the trends in Canadian fertility, and the social implications of those trends. Specifically, the Workshop was designed to pursue three related goals: first, the identification of determinants of future fertility in Canada; second, the identification of substantive areas of research and analysis related to these determinants; and third, the identification of gaps in existing Canadian data, and the exploration of ways and means whereby such gaps might be rectified.

The sponsors of Statistics Canada Workshop were Mr. John Coombs, Director of the Health Division, and Mr. L.E. Rowebottom, Assistant Chief Statistician of the Institutions and Agricultural Statistics Branch. The initiative for the Workshop rested primarily with Mr. John Silins, Chief of Vital Statistics and Disease Registries. The actual organization and planning of the encounter was the responsibility of Mr. Dhruva Nagnur, Demographer, Vital Statistics and Disease Registries Section, Health Division.

Eighteen academicians and scholars from outside participated in an intensive two-day seminar with some 35 members of Statistics Canada. Not all of the academics participated in both days of the Workshop. Among the members of Statistics Canada, 18 actually took part in the discussions, while the rest were present as observers. The names and affiliations of participants are listed in the Appendix.

On the first day, a three-hour session was devoted to a general discussion of determinants of future fertility, followed by a more specific discussion of substantive research areas which might be explored. On the second day, attention was directed towards the ways and means whereby the quantity and quality of information about the Canadian population might be improved, either by a more thorough exploitation of existing data, or by the generation of new data through surveys or other studies.

In the following report of the proceedings of the Workshop, Chapter Two is devoted to a discussion of the determinants of fertility, with a special focus on cultural and social psychological components. Chapter Three is less theoretical, and is concerned with outlining specific substantive areas of interest for future research. The problems of gaps in demographic data are approached in two ways: Chapter Four addresses itself to ways and means whereby existing data might be more fully utilized; Chapter Five explores some of the possibilities whereby additional data might be generated. In Chapter Six, there is a summary of the key points and of major recommendations for future research. Finally, as an epilogue, in Chapter Seven some of the implications of fertility trends are noted and are discussed in terms of the possible nuances of pronatalist or antinatalist policies.

A verbatim transcript of the entire proceedings of the Workshop, was prepared and edited by Mr. Nagnur. In preparing the summary, some specific comments or recommendations are cited by the name of the participant, and in several instances the remarks are transcribed *in toto*. Wherever possible, when reference was made to published works, the exact citation was obtained and is listed in the bibliography.

The presentation of this report of proceedings requires an initial caveat. The format of the Workshop was that of focused discussion, disciplined by various chairpersons, and by the fact of being recorded and/or translated simultaneously. As a consequence, when specific persons made comments or recommendations, there was usually no way of knowing whether or not the rest of the participants concurred. In some instances, a participant's comments or recommendations were met with explicit agreement or disagreement: however, in most instances the remarks of one speaker

were not immediately discussed by others. The lack of response by colleagues may often signify concurrence but does not guarantee it. Since no explicit consensus was reached, the Workshop as a whole **should not be held responsible for the opinions of any one member.**

Although Statistics Canada provided the forum for discussion for the fertility Workshop, Statistics Canada obviously cannot be held responsible for the opinions which were expressed there, either by its own members or by the invited academics. The perusal of the verbatim transcript makes it readily apparent that spoken language is a very different form of communication than is written language, and so necessitates a second caveat. In preparing the summary report, I have taken considerable liberties in transforming what was actually said into which I think was meant. I was aided in this task by the invaluable contributions of Mr. Nagnur, who made many substantive and stylistic suggestions regarding the penultimate manuscript. The participants themselves are responsible for their comments, but of necessity **I am responsible** for their subsequent "translation" into summary form and more importantly for the views presented in the epilogue: Some Policy Issues.

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CHAPTER TWO

ASSESSING THE DETERMINANTS OF FERTILITY

ASSESSING THE DETERMINANTS OF FERTILITY

Baby Boom to Baby Bust

A fluctuation in fertility rates from baby boom to baby bust has been well documented. Delineation of exact turning points in these tides depends upon whether fertility is measured by the simple means of a crude birth rate or by the more sensitive measures of general fertility or total fertility rates. Whichever indicator is chosen, it is clear that fertility in Canada peaked in the late 1950s, and since that time has exhibited an unabated decline (Table 1). The reasons for the decline are many and are subject to debate: however the fact of decline is clear. In general terms, **Canadian fertility is only half of what it was a quarter of a century ago.** The changes in Canadian fertility roughly parallel those in the United States. In that country, the birth rate per thousand was at a low of 18.3 during 1930-1935, increased to a high of 25.2 during 1950-1955 and has since dropped to a low of 15.9 during 1970-1975 (Easterlin, 1978:422).

The marked decline in Canadian fertility paradoxically occurred at a time when there was actually an increase in the number of women of child-bearing age (Wilk). For example, from 1961 to 1976, the number of women aged 15-30 increased by over 60%, but the general fertility rate declined from 111.5 to 60.3 (McVey).

Canadian fertility has not only declined: since the early 1970s, the levels have been such that if sustained for long it could mean below replacement level fertility in the future. During the baby boom, the total fertility rate (TFR) peaked at 3.94 in 1959, compared with 3.71 in the United States in the same year (Easterlin, 1978:423). Since that time, the TFR has declined steadily, reaching a low of 1.76 in 1978 (Table 1). In the United States, the lowest recorded TFR was also 1.76, observed in 1976 (Easterlin, 1978:423). These extreme variations raise the question of how low a TFR can actually go. A TFR of 1.6 was observed in West Germany (Grindstaff). It is clear that the TFR cannot decline much more, but it is possible that it may decline still further. Current projections based on a TFR of 1.7 suggest a low-growth or no-growth state for Canadian society well into the twenty-first century (McVey). If replacement level is to be reached and maintained, there will have to be a sufficiently large proportion of couples who will have to have two children, and a certain proportion, three children. The question is: "Will the constraints of the general culture allow enough couples to have the third child?" (Lapierre-Adamcyk).

Forecasting Fertility: Short Range and Long Range Views

In western industrialized countries, fertility first began to decline after the First World War. At that time, demographers voiced public concern about the reduction of births and the possible threat of extinction of populations. The subsequent baby boom and population explosion reduced their credibility as forecasters. The immediate future of fertility trends is still not entirely clear and is subject to debate. However, at least in the developed western world, the overall future of fertility is influenced by at least two circumstances whose effects are incontrovertible: the economic liability of children and the presence of choice.

In the past, children were actually or potentially an economic asset. With industrialization and urbanization, children became a definite liability, at least from an economic point of view, with the result that fertility rates became more closely tied to the economic situation. "For the individual deciding on parenthood, the fact cannot be avoided that **every decision to have a child means a decision to accept a lower standard of living in return for the satisfactions of parenthood.** If parenthood were strictly a rational economic matter, few of us would have been born" (Udry, 1971:391).

The second incontrovertible fact is the fact of choice. The dissemination of birth control knowledge, and the increase in its effectiveness and acceptability, has meant that women increasingly do have a choice of how many children they are going to have, if any, and when those children are to be born. The fact of choice is an essential and irreversible fact of the contemporary developed world (Grindstaff). While it has theoretically been available since the first introduction of birth control techniques, it is only in recent decades that most persons have had knowledge of appropriate techniques, access to them, and the inclination to use them. The availability of the option to parent or not has precipitated a direct comparison -- or confrontation -- of the rewards perceived to accrue from parenthood with the rewards perceived to accrue from having no children or having only a few: rewards ranging from tangible material comforts to intangibles, such as freedom to enjoy an adult-centred life style. When such a **hedonic calculus** occurs, it is increasingly apparent that while most couples still choose to become parents, they choose to have fewer children than in the past, preferring one or two rather than the traditional family of three or more.

The Easterlin Hypothesis. Faced with the fact of fertility decline, some demographers have argued that the current low level of fertility rates is only one point in a fluctuating cycle, and while it is unlikely that we will

return to the very high fertility observed at the turn of the century, it is possible that some increases will occur. Easterlin (1979) predicts that fertility will be tied directly to changes in the economic condition. The Easterlin hypothesis on fertility is most succinctly put, not by Easterlin himself, but by Ryder.

His theory is that young people decide on their eventual number of children by comparing their opportunities (which depend on their numbers) with their aspirations (which depend on their family of orientation). Thus those who belong to a small cohort (such as persons born in the 1930s) fare well in the labour market and convert their good fortune into more babies: those who belong to a large cohort (such as persons born in the 1950s) do poorly in the labour market and respond by having fewer babies. The thesis is essentially a cyclical one. Bad times mean fewer children, whose economic opportunities look better because they were raised in bad times. They in turn experience good times, and have more children, whose economic opportunities look worse because they were raised in good times. It would follow that, as the small birth crops of the past decade come of economic age, fertility will rise, *ceteris paribus* (Ryder, 1979:360).

The Easterlin model involves the assumption of an invisible hand which prevents us from straying too far from the averages and always brings us back to equilibrium (Lux).

Contrary to the Easterlin hypothesis is the work of Butz and Ward (Norland). In a series of articles (1979a, 1979b), they suggest that from the viewpoint of the mother, the child represents an opportunity cost, because it limits her access to gainful employment. In good economic times, when jobs and high earnings are available, fertility might decline; conversely, if there are relatively few desirable opportunities, fertility might increase, lending to a series of "ripples" in fertility levels. The independent variables in this model include all kinds of variance in female earnings, such as hourly and weekly earnings, family income, and female employment ratio; the dependent variables include the TFR as well as age-specific fertility rates. Using regression models for the American case, Butz and Ward make a "very strong and convincing" case for their model (Norland). The Butz-Ward model has been applied to the situation in the United Kingdom. However, recent work by Norland and Ram have failed to document it for the Canadian case, which is remarkable in that Canadian trends usually parallel the American in all major respects (Norland).

Table 1. Birth Rates, Canada, Selected Years, 1929-1979

Year	Crude Birth Rate*	General Fertility Rate**	Total Fertility Rate***
1929	23.5	94.5	3.217
1930	23.9	96.2	3.282
1931	23.2	93.6	3.200
1932	22.5	90.3	3.084
1933	21.0	84.2	2.864
1934	20.7	82.5	2.803
1935	20.5	81.5	2.755
1936	20.3	79.8	2.696
1937	20.1	78.7	2.646
1938	20.7	80.7	2.701
1939	20.6	79.6	2.654
1940	21.6	83.7	2.766
1941	22.4	86.6	2.832
1942	23.5	91.1	2.964
1943	24.2	93.8	3.041
1944	24.0	92.8	3.010
1945	24.3	93.2	3.018
1946	27.2	105.0	3.374
1947	28.9	112.4	3.595
1948	27.3	107.5	3.441
1949	27.3	108.0	3.456
1950	27.1	107.7	3.455
1951	27.2	109.2	3.503
1952	27.9	113.0	3.641
1953	28.1	114.8	3.721
1954	28.5	117.2	3.828
1955	28.2	116.5	3.831
1956	28.0	116.6	3.858
1957	28.2	118.0	3.925
1958	27.5	115.8	3.880
1959	27.4	116.3	3.935
1960	26.8	114.1	3.895

Table 1. Birth Rates, Canada, Selected Years, 1929-1979 (Concluded)

Year	Crude Birth Rate*	General Fertility Rate**	Total Fertility Rate***
1961	26.1	111.5	3.840
1962	25.3	108.3	3.756
1963	24.6	105.3	3.669
1964	23.5	100.2	3.502
1965	21.3	90.3	3.145
1966	19.4	81.5	2.812
1967	18.2	76.1	2.597
1968	17.6	72.9	2.453
1969	17.6	72.3	2.405
1970	17.5	71.2	2.331
1971	16.8	67.7	2.187
1972	15.9	63.4	2.024
1973	15.5	61.5	1.931
1974	15.6	60.6	1.875
1975	15.8	61.2	1.852
1976	15.7	60.3	1.825
1977	15.5	59.4	1.806
1978	15.3	58.0	1.757
1979	15.5	58.2	1.764

* Crude Birth Rate = births per 1,000 population

** General Fertility Rate = births per 1,000 women aged 15-49

*** Total Fertility Rate = average number of children that would be born if women were to pass through all child-bearing years conforming to the age-specific fertility rates of a given year.

Source: 1977, 1978 and 1979 Vital Statistics, Statistics Canada, Catalogue 84-204.

Hard Times - Soft Times: A Debate.

In the developed world, it is clear that children are economic liabilities which constitute a two-fold drain upon family resources: the direct costs which are incurred by them and the indirect costs which they cause if they prevent the mother from gainful employment. If children are considered expensive, the willingness to indulge one's taste for parenthood partly hinges upon what one can or cannot afford; or rather what one can or cannot afford without undue sacrifice of other goals. Within this perspective, it is therefore critical to understand how couples view their economic situation.

Workshop participants were unable to agree on the current economic "climate" of Canadian society. Several questions were raised. Is Canada in a state of economic crisis? If so, does that inflationary state and the resulting depression mentality affect fertility decision making?

Krotki argued strongly that Canadians live in a "flourishing society", as a well-off and prosperous people who enjoy an improving standard of living, and who live in dual-career families by choice rather than necessity. Certainly the times are better than they were in the Depression, when fertility in general was higher, and when there were marked differentials between the privileged and the poor people (Lapierre-Adamcyk). Fertility declines began in the late 1950s, at a time when the standard of living in Canada and many other countries was increasing in a marked way (Krotki). Since that time, many objective indicators suggest that in fact we are better off than before: for example, there have been increases in the national income per capita, the number of cars per family, ownership of colour televisions, and in international holiday travel (Krotki). In summary, the alleged deterioration of the Canadian economic position since the late 1950s as a cause of fertility decline is considered to be "one of the more absurd suggestions in the history of human thought" (Krotki).

Some disagreement with Krotki's position concerned the *ad hominem* argument of his "fat cat" position (Ebanks). The Canadian economy is perceived to be weakening as a result of inflation and an escalation of housing costs. The "economic crunch" (McVey) is such that it is necessary for wives to continue to work in order to maintain family living standards. The deteriorating well-being of Canadians over the past decade has led to a kind of depression mentality which is perceived as either a direct or a contributing cause of fertility decline (Ebanks).

While it is unlikely that the debate about economic factors and fertility will be resolved, it might be pointed out that the persons decrying the influence of economic factors are assessing them mainly in absolute

terms: in contrast, those who feel they are most relevant may see them in relative terms. The situation of Canadians is doubtless advantaged compared with the rest of the world: we are well-fed and well housed. However, in terms of individual decision making, the relevant factor may not be the absolute level of wealth, but the sense of relative deprivation compared with how things were in the immediate past or compared with how others are perceived to fare. A rich society may inspire in its population escalating aspirations which run counter to parenthood aspirations (Lapierre-Adamcyk). Assuming a version of Parkinson's law that "expenses rise to meet income", we can routinely observe that to live comfortably individuals feel they "need" about a quarter more than they presently have. Inflation has not led to a significant deterioration of the Canadian life style: however, it may well have led to the perception of relative deterioration, and with it the perceived "need" for two incomes. If we presume to examine motives, then it must be recognized that there exists a plurality of motives: the reasons for beginning an activity may be quite separate and distinct from the reasons for continuing it. Women may enter the labour force due to real or perceived economic necessity; however, once they have done so, they may stay there for reasons relating to the intrinsic nature of the work, for reasons relating to personal power and independence associated with being a wage-earner, or for the acquired taste of an escalated standard of living (Veevers).

Low Fertility Is Here to Stay. At the beginning of the 1980s, the baby-boom cohorts born from 1945 to 1955 are in the 25-35 age range, when their fertility might be expected to be at its highest. This has led some demographers to speculate on the possibility of an "echo effect", which might occur when an exceptionally large cohort of women reach child-bearing age and so create in effect a "mini baby boom". This phenomenon has not occurred in Canada. Persons in the leading edge of the baby boom cohort have had relatively low fertility. However, one of the problems in predicting fertility is the uncertainty whether women who say they do not want children, or who say they wish to delay them, actually have them eventually. The age of 35 is about the last chance to have children, hence the term "the catch-35 dilemma" borrowed from **Great Expectations** (Jones, 1980) (McVey).

In the United Kingdom, there has been a slight upturn in fertility rates since 1977 -- a change manifest in all age groups and in various economic groups (George) (Population Trends 1978-79). In the United States, Kitagawa (1981) reports that women aged 25-34 are having significantly

more children in 1978-1979 than they did in 1974-1975, suggesting that to some extent low fertility cohorts who have postponed births may begin to catch up. But, in real terms this change may only mean that the TFR goes from 1.80 to 1.83, not a substantial increase (Grindstaff).

In Canada from 1975 to 1979, although fertility rates in general declined, the fertility rates of women aged 30-34 increased slightly (McVey). However, in 1979, almost 74% of all fertility was attained before women reached the age of 30, and 95% was attained before age 35 (Nagnur, 1980:3). Although delayed motherhood represents a dramatic solution for some women, the birth rates for women over 35 are low and continue to decline, and the possibility of a reversal in this trend appears remote (Nagnur, 1980:3). When women begin at older ages to have their children, they do not have as many, and are unlikely to catch up with the higher reproductivity of women who became mothers at an early age.

Many demographers have asserted what now seems to be a truism: low fertility is here to stay (Bumpass, 1973). The overwhelming press of irreversible cultural and social changes, including importantly the birth control revolution and the economic emancipation of women, make it virtually certain that, given a choice, couples will choose to have fewer children than they produced in the past (Westoff, 1978; Ryder, 1979). The question remains whether or not the low level of fertility will constitute an adequate replacement level.

The Decline of Differential Fertility

With the decline in overall fertility is observed a decline in differential fertility for various segments of the population. As more and more persons use contraception effectively, the structural variables which traditionally varied do not make as much difference. In developed countries, we observe a convergence of fertility (Basavarajappa). In Canadian society, although there are instances of high fertility, for example among native people, in most instances fertility in general is low, the differentials among groups are becoming low, and in some cases "not perceptible" (George). What results is an increasing "homogenization" of fertility within and between groups (Lapierre-Adamcyk). Under these circumstances, the examination of the remaining differentials in terms of cultural factors may be of interest sociologically or politically but it is unlikely to be of much benefit for forecasting fertility (George).

The decline in differential fertility is reflected in the shift in importance of ascribed versus achieved traits. Thus, in the 1971 Census data, older women's fertility varied by language, religion, ethnic background and nativity. However, for young women aged 20-30, the prime variables were the achieved ones of education and labour force participation (Grindstaff).

The importance of continuing to examine differential fertility, even though it is declining, is subject to debate. On the one hand, very small differences may have little real meaning in cultural terms. "It may be that between two groups there is a statistically significant difference between an average of 2.4 rather than 2.5 children: however, is this culturally significant?" (Lapierre-Adamcyk). On the other hand, the persistence of even small differences may be theoretically significant (Krishnan). If we want to refine fertility analysis, and explain its determinants in greater detail than we have done so far, we need to examine the factors which lead people away from the general norms. Even small differentials, such as an average half child per family, continue to be worthy of examination (Krishnan).

Those sub-groups where variations in fertility are still found may provide a useful medium for the examination of the cultural component of fertility (Grindstaff). For example, the Jewish people consistently have low fertility, whatever other variables you control (Ram). Other minority groups, such as Native Indian populations, have traditionally had exceptionally high fertility rates. For example, in Canada the Native population fertility rate and cohort rate in the older age groups approached three times the general fertility rate, and even among the younger persons the rate is roughly twice that of the general population (Romaniuc). (Although such extremes still exist, they appear to be converging fast, suggesting that if we wish to examine such atypical populations, we should do it soon (Krotki).

When fertility rates fall below replacement level, the study of differential fertility may in fact assume a new importance. Fertility sub-groups, who are atypical in their decisions either not to have any children or to have a large number, may hold the balance of demographic power, just as, politically, sub-groups may hold the balance of democratic power. Although quantitatively marginal, they may in practice be dominant or quasi-dominant (Lux). It is the fringe groups which, in terms of their size and their behaviours, will dictate whether we will be just over or just under cohort replacement level. They are strategically important (Lux).

A major problem, therefore, is to identify groups which have resisted the dominant ideology of having only one or two children, and have either deliberately remained childless, or have gone to the other extreme and had three, four or five children. Such persons might eventually form in effect a large-family minority (Lux). Several questions can then be posed. Census analysis would permit us to answer the questions of how large such fringe groups are and who, in demographic terms, belongs to them. Specialized surveys would be required to answer the other questions of why persons join such fringe groups, and how they manage to resist the dominant fertility ideology. Since both behaviours may make the difference between achieving or not achieving cohort replacement (Lux), in pragmatic terms, therefore, it would be of considerable relevance to know how people select themselves out in this way.

Determinants of Fertility: Quantitative and Qualitative

The analysis of fertility is complicated by the causal complexity of it with other societal factors. It is clear to everyone that the drastic decrease in Canadian birth rates will, if sustained, have profound social and economic consequences: in turn, changes in social and economic conditions will influence future fertility trends very significantly (Wilk).

The first step in assessing the determinants of fertility is simply to catalogue the components believed to be correlated with it, without necessarily moving beyond to models of cause and effect. One such inventory was provided by Grindstaff as a starting point for discussion. Various researchers provide comparable lists, each with a slightly different order of precedence and specificity.

During the decades that demographers have been preoccupied with the analysis of fertility and the determinants of differential fertility, they have focused their attention mostly on structural components; the best data available relate to objective, structural variables. Using such standard dimensions as race, religion, age, age at marriage, and other quantitative data available from census or survey data, they have been able to explain between 30% and 40% of the variance in fertility (Ebanks; Krishnan), a considerable accomplishment considering the vagaries of social variables and social science data. However, further analysis of these variables, or more sophisticated multivariate analysis of them, seems unlikely ultimately to account for the much larger proportion of the discrepancy which remains to be explained.

A basic goal in fertility research -- perhaps the basic goal -- is to try to determine why couples decide to have the first child, why they decide to have the second, and especially why they decide to go from two to three which is, demographically speaking, the most critical transition (Henripin). Although some demographers are optimistic about the utility of more surveys, or bigger or better surveys, decades of traditional research, involving standard run-of-the-mill questionnaires, have failed to help us understand these questions and, in the opinion of one "wet blanket", (Henripin), they are likely to continue to fail. Surveys may tell us many interesting things, but they do not lead to a real understanding of the decisions couples make, if indeed conceptions and births are the result of a conscious decision-making process.

If more than 30% to 40% of the variance is to be explained, attention must be shifted to the social-psychological and cultural variables, and to explanations of how they impinge directly on fertility. Having dealt with institutional variables, we now need to work with the intermediate variables -- intentions, attitudes, values -- to measure to include them in the multivariate analysis of fertility (Ebanks). In explaining fertility, there seems to be relatively little more than can be done with the straightforward and factual finds of questionnaire data available from the Census, from Vital Statistics, and from conventional fertility surveys. An examination of social-psychological variables, as opposed to strictly demographic ones, necessitates a shift in study design and in research techniques. It is difficult to get psychological data from a questionnaire approach. At least initially, attention to social-psychological variables requires some approximation of an in-depth interview, conducted on a face-to-face level. The first major attempt to look at social-psychological factors in fertility was the Indiannapolis study. The topic was problematic then, and it has remained so in Canadian studies, such as the one in Toronto (Balakrishnan et al., 1975). The measurement of personality and other psychological variables is complex and difficult, and while it is uncertain how much of the variance they would explain, it is nevertheless a worthwhile area for future research (Grindstaff).

The study of social-psychological factors in Canadian fertility draws heavily on two studies done in Quebec, one in 1971 (Henripin and Lapierre-Adamcyk, 1974) and one in 1976 (Henripin et al., 1981). The 1971 Quebec survey involved a province-wide representative sample of 1,745 ever-married women ages 15 to 64. The young women in this survey, those aged 15-34, were then followed up in 1976 when they had reached the age of 20-39 and had been married for at least five years.

Trying to tap the social-psychological level is difficult. As seen from the value of children study in Hawaii (Arnold *et al.*, 1975), the process is extremely complex, time-consuming, and expensive. "It is too much to expect respondents themselves to be able to tell us what in society prompted them to have one child, or to have one more when they already have two" (Lapierre-Adamcyk). Explanations for child-bearing involve rationalizations and **A posteriori** justifications, defined within the boundaries of the degrees of freedom perceived by the couple (Lux). Insight into such psychological factors will depend, not upon objective questions, but upon in-depth interviews, using different work tools which can tap subtle psychological realities (Henripin). A careful experimental design might eventually yield properly formulated questions which might later be incorporated for use with a larger sample (Ebanks).

Although for practical purposes, cross-sectional data are often all that can be obtained, what is really needed to explain fully the trends in fertility and their probable future are longitudinal studies. An appropriate strategy might be close observation of a small number of couples over a period of several years, with an analysis of the events and factors associated with their fertility decision-making, bearing in mind that the factors associated with having or not having a third child are not always the result of a conscious decision-making process (Henripin).

The study of fertility by description and analysis of social-psychological factors as revealed in in-depth interviews is clearly beyond the purview of Statistics Canada. Within this perspective, the role of Statistics Canada in aiding the study of fertility is quite modest. All that it can, or should be trying to do, is to provide an updated description of fertility parameters, such as length of marriage, number of children born, child-spacing intervals, and fertility intentions (Henripin).

The Cultural Component of Fertility

The concept of culture is perennially difficult to define, and in spite of some pioneering works, it has not been possible for demographers really to define what the cultural component of fertility is (Krishnan). The basic idea is that culture shapes fertility norms, and that norms then shape the level of fertility of the population. When the explanatory power of the traditional structural determinants of fertility has been exhausted, the remaining variance may be conceptualized as involving cultural factors at the macro level, and as involving social-psychological factors at the micro

level of individual decision making. Culture then comes to be defined as a residual category: those differences which cannot be accounted for by the usual socio-economic or demographic variables are assumed, in the absence of other factors, to be due to cultural factors (Krishnan).

It is easy to assert that the cultural component is important: it is quite another matter to transform the idea into specific components which can be described and measured. Demographers are accustomed to addressing the quantifiable aspects of fertility. Because they are relatively ill-equipped to measure as amorphous and abstract a phenomenon as culture, they have a tendency to avoid or at least to minimize the cultural component (Lux). Coping with qualitative variables would constitute an "immense challenge", but would represent a significant step forward.

Attention to the cultural components of fertility seems most useful when populations involved have a generally high level of fertility, and where there are marked differences among them. For example, they are certainly relevant for the study of primitive societies in India and Africa (Romaniuc, 1980). Differences among groups can be observed, and the relevant social and cultural aspects usefully incorporated into different family planning programs. Culture may be crucial in the extent to which countries are or are not exposed to the idea of controlled and smaller families, and hence in their involvement in the demographic transition (Van de Walle and Knodel, 1980) (Beaujot). It is also of significance in explaining in developed countries the existence and persistence of group differences in fertility rates.

Krishnan offers one attempt at assessing the cultural component of fertility in Canada. Using 1971 Census data on mother tongue, he compared the fertility of four groups, English, French, German, and Italian. Regression analysis was done to remove the influence of socio-economic status, assimilation (as measured by use of English) and age; and it was found that these account for from 30% to 35% of the variance, leaving 65% to be attributed to cultural factors. A factor analysis of the data suggested that while cultural factors did not contribute substantially to the English or French differentials, when other plausible variables were removed, there remained for the German and the Italian two or three factors which could not be identified, but were assumed to be cultural (Krishnan).

In Canada, in a situation of diminishing fertility and diminishing differential fertility, it is sometimes contended that, except perhaps for some extreme religious groups, the distinctiveness of cultural groups is diminishing and will continue to diminish. In Canada, the Quiet Revolution opened existing culture to the broader North American and European input so that the cultural differences which were there for so long are no longer there (Beaujot). According to one viewpoint, the usefulness of cultural explanations of Canadian fertility differentials has been exhausted, and this approach is no longer a very useful point of analysis (Beaujot).

The study of fertility in terms of the cultural component has some intrinsic limitations. Because culture is more or less constant and ongoing, the cultural component is not useful in accounting for trends. Because declining fertility has resulted in a corresponding decline in differential fertility, and the convergence of sub-groups, the interest will of necessity be more in trends than in the differentials observed at any one point in time (Krotki).

The cultural component of fertility does not readily lend itself to examination through secondary data. An adequate examination must involve interviews specifically focused on the area of culture and fertility, which can tap areas and factors not normally tapped in the kinds of questions the Census does or can ask (Grindstaff). There is a need for intensive in-depth interviews with specific groups, a technique which perhaps might be better accomplished by anthropologists or demographer-anthropologists who have more insight in these areas (Krishnan).

Social-Psychological Variables

To account for the future variations in fertility, one of the most fruitful areas for investigation is at the micro-level of the social-psychological factors associated with individual decision making (Grindstaff). Exactly which components are relevant is not at all obvious, but many potential dimensions could be suggested. For example, the decision to have a child, or another child, might plausibly relate to general personality factors, to a sense of coherence and adequate coping mechanisms, to issues of inter-familial power, or to general conceptions of life style (Grindstaff). Negative considerations of reasons not to have children might range from a general sense of cultural decay and deterioration (Ebanks) to a concern with the environment and over-consumption of resources. It is not possible

to suggest an exhaustive list of social-psychological variables which might impact on fertility; however, a number of relevant ones can be observed to cluster around three key issues: the changing meaning of work and the resulting increase in women in the work force; the changing meaning of marriage; and the changing meaning of parenthood.

Women in the Labour Force: The Changing Meaning of Work. A major factor in the decline of Canadian fertility -- perhaps the major factor -- has been the dramatic increase of women in the labour force. Fifty years ago, of all women over 14, about one-fifth were in the labour force; by 1980, over half of adult women were working (Table 2). A comparable change has occurred in the United States. In 1930, about a quarter of women aged 20-54 were in the labour force; in 1975, more than half were, and for those aged 20-24, the rate increased to more than two-thirds (Easterlin, 1978:424). Even more spectacular has been the changing definitions of the employability of married women. In 1931, for example, although, of all women, 19.3% were in the labour force, only 3.4% of married women were so classified, a situation which remained more or less unchanged for the next two decades. By 1951, however, the participation rate of married women had risen to 11.4%. Since then, as the participation rate of women in general has increased, rate of married women has increased even more dramatically; by 1980, however, marriage *per se* makes little difference in the likely hood of labour force participation: in both instances, about half of all women work or are seeking work (Table 2). "In recent years, the number of married women in the labour force has been growing at an even faster rate than the long-term trends would suggest, and it is thus likely that the phenomenon will persist into the next decade" (Wood and Kumar, 1977:18).

While the data show that individuals are still getting married with enthusiasm, it is also clear that the nature of marriage is changing. The traditional role of a husband as the sole wage-earner with a dependent wife, has been replaced by a model of a dual-income family, in which both contribute to the achievement and maintenance of their standard of living.

Table 2. Labour Force Participation Rates* For Women: Canada, Selected Years, 1931-1980

Year	All Women Over 14*	All Wives
1931	19.3	3.4
1941	20.3	4.5
1951	23.6	11.2
1956	24.9	14.2
1961	28.8	20.8
1966	33.6	26.8
1971	37.1	32.9
1975	44.4	41.6
1976	45.2	42.9
1977	46.0	44.2
1978	47.8	46.3
1979	48.9	47.4
1980	50.3	48.9

*Participation rate: Number of women in the labour force (employed and unemployed) compared with the total number of women 15 and over; rates prior to 1975 are calculated on total number of women 14 and over.

Source: For the years 1931 and 1941 - Census Data - Statistics Canada.
For the years 1951-1980 - Labour Force Survey - Statistics Canada.

The covariation of fertility rates and employment rates is clear and dramatic. At the macro level, as rates of fertility have declined precipitously, rates of employment of married women have increased markedly. At the micro level, the fertility level of working women is consistently lower than that of those who are not working (George). Childless wives are more likely to be gainfully employed than are mothers; mothers of relatively small families are more likely to be gainfully employed than are mothers of relatively large families. The wife's employment impacts on the fertility decision making in two ways: either the woman cannot afford to give up her job and therefore has no children (or has them later); or she has children and works as well. The fact is that the feasibility of being a working mother is quite different if one has only one or two children as opposed to three or four or more.

While data on the labour force participation of all women, or of all wives, is of general interest, what is crucial for the study of fertility is the employment status of wives of child-bearing age. Real changes in the meaning of work in marriage tend to be obscured by the presence of large and increasing numbers of older wives who do not have children at home, but who are either not ideologically committed to being employed and/or who are of retirement age. When attention is directed only to young women, labour force participation rates are observed to be even higher, and increasing rapidly. Among women aged 20-44, the proportion in the labour force increased from just over half in 1975 to two-thirds in 1980 (Table 3). The rates for wives were lower, as would be expected, but only marginally so: in 1980, of all young wives, nearly 6 out of 10 were in the labour force. The phenomenon of working wives is no longer a deviant occurrence: it has become the usual case.

Table 3. Labour Force Participation Rates* For Women Aged 20-44, by Marital status: Canada, 1975-1980

Year	All Women Aged 20-44*	All Wives Aged 20-44
1975	56.1	49.9
1976	57.2	50.9
1977	58.9	52.9
1978	61.7	56.0
1979	62.8	57.3
1980	64.9	59.4

*Participation rate: Number of women in the labour force (employed and unemployed) compared with the total number of similar women in the population.

Source: Labour Force Survey, Statistics Canada.

A primary determinant of a wife's participation in the labour force is not only the number of children she has, but also the age of the children. In the recent past, a significant distinction was made between women with children who were under 15, compared with those over 15. For example, in 1961, only 17% of women with children under 15 were working, compared with 32% of those with no children that young. In past years, however, the significant age for labour-force decisions appears to be decreasing. Thus, in 1971 the participation rates of women with children aged 15-24 was 41.9%, almost identical with the rates of 41.2% for women with children aged 6-14. Only for wives with young children under 6 did rates fall to 25.2% (Veevers, 1971).

In summary, the data suggest three significant trends: wives in general are more likely to work; mothers in general are more likely to work; and decisions about working in terms of age of children relate less to the achievement of adolescent status than to the achievement of school-age status.

The covariation of employment rates and fertility rates is difficult to account for in causal terms, and there is a lack of consensus on explanatory models. Do women who need or who wish to work therefore have relatively few children, or do women who have relatively few children therefore want to work? Do high work aspirations lead to low fertility goals, or do low fertility goals lead to high work aspirations? It is very difficult to say which is cause and which is effect (Romaniuc), and more research, preferably longitudinal research, is needed on the relationship between fertility and economic participation (George). Meanwhile, at least three hypotheses pertain:

1. Wives who find it economically necessary to work may choose to have fewer children because they do not have the time and energy to devote to motherhood.
2. Wives who choose to work may choose to have fewer children because they wish to have more time and energy to devote to a career.
3. Regardless of the reason for beginning to work, once wives participate in the labour force they may establish a pattern of working and become accustomed to its extrinsic and intrinsic satisfactions. Once this pattern of behaviour is established, single or married, with or without children, it becomes difficult to terminate (McVey).

The perception of the Canadian society being in a state of "hard times" involves the perception that wives increased participation in the labour market is a result of necessity rather than choice, and that given a better financial situation many (or most?) would choose to return to the more conventional and conservative roles of the past (Beaujot). The perception of inflation as a major cause of economic stress means that both partners in the marriage are required to work, and that the requirement for two incomes tends to pre-empt opportunities for childbearing. In this perspective, it is not the cost of children *per se* which is critical, but that the family cannot afford to give up the wife's income in order for her to bear and to care for children. What has changed is not that children are economic liabilities -- which has been true for some time -- but that wives incomes have become economic assets which the family is reluctant to give up (McVey).

When women worked only through necessity, or at least when wives did so, the definition of it was in terms of undesirability and failure. Once the idea of women, including wives, working became acceptable, women worked for many other reasons in addition to whatever intrinsic satisfactions they might have with their positions. These included, among

others: to further increase their standard of living; to achieve and maintain a more favourable balance of power in the home; to maintain their actual or potential independence; and to protect themselves against the loss of their marital status. Given the changing meaning of work and the variety of increasingly desirable jobs to pick from, it seems unlikely women will choose to abandon these ends and to return to the home to support the procreation ethic (McVey). This contention, however, is not obvious, and the perception of "hard times" may mask a return to a more conservative and dependent orientation. A survey of women's employment aspirations, and of recent changes in them, would be useful in this regard (Beaujot).

The Changing Nature of Marriage. Traditionally, fertility was supposed to take place in the context of lifelong primary marriage. With the advent of the 1960s, there was considerable attention directed towards alternative life styles. The introduction of a plurality of family forms, involving communal living, chosen singleness, cohabitation, and other variations, supposedly served to weaken commitment to traditional life styles. While such publicity was interesting, it became apparent that it reflected mainly the concerns of a vocal minority, and that the so-called "death of the family" was indeed greatly exaggerated. While non-marital cohabitation is undoubtedly becoming more common, most young persons still aspire for marriage roles, and most do achieve them. For example, it is estimated from the Canadian data for 1975 to 1977, of all persons who live to the age of 15, 90% of the males and 92% of the females will eventually marry (Adams and Nagnur, 1981:56). Although cohabitation has presumably increased, more than 95% of couples who live together are married. It seems likely that a general commitment to the ideal of marriage and of having a family continues to be very strong (Grindstaff).

Although most persons marry at least once, since 1972 the rates of marriage have declined slightly but consistently, in spite of an increased proportion in the population of persons of the most marriageable ages. The data suggest a pattern of a commitment to marriage, and a tendency of both men and women to postpone that event until a later age than previously (Nagnur, 1979:3).

Although most people still marry, the meaning of that event is changing, and must be redefined in the light of changing definitions of marriage and divorce. We still swear to live together "until death do us part", but death is not doing its job anymore, with the result that marriages have the potential to endure for decades, and in that time are increasingly exposed to the risk and temptation of divorce (Krotki). Divorce rates went up markedly after the 1968 Divorce Reform Act, as did separations, and these rates are still increasing, although at a slower pace. While any one couple

may intend to stay together "until death do us part", in reality many couples are routinely observed to be ending their marriages for a variety of reasons, including not only the traditional matrimonial "faults" but also the more nebulous "marriage break-down".

The reaffirmation of commitment to marriage is paradoxically reflected in the divorce process. Divorce rates went up markedly after the 1968 Divorce Reform Act, as did separations. However, since that time the rate has tended to level off. More significant is the fact that most divorced persons get remarried, and also within a relatively short period of time. For example, data on Canadians from 1975 to 1977 show that of all divorced men, 84% will remarry. Among divorced women, the proportion who remarry is slightly lower, 75%, but the willingness and ability to re-enter the role of wife apparently is still high (Adams and Nagnur, 1981:57). As a result, at any one point in time, only 1% or 2% of the adult population in Canada is in the category of divorced (Grindstaff).

The pattern of relatively high divorce rates followed by high remarriage rates suggests a changing meaning of marriage to one involving serial monogamy. It is not known what effect the uncertainty of maintaining one's matrimonial status may have on the willingness to have children. Certainly if one anticipates a pattern of serial monogamy involving marriage, divorce, and subsequent remarriage, the fewer children one has, the less interference with the opportunity to participate in this new marital form (Romanuic).

The Changing Nature of Parenthood. Traditionally, the value of children to their parents has involved two separate components: an extrinsic value related to economic exchanges and an intrinsic value related to the nature of the parent-child relationship. In third-world countries, high fertility is a rational response to an uncertain economic future. A large family provides some measure of security for one's old age (Lux). In developed countries, however, the economic rationales for high fertility no longer apply, and the functions of the extended family are taken over in varying degrees by a welfare system (Ebanks). Under these circumstances, children are not only not economic assets but are in fact economic liabilities. The role of children in parent's lives is therefore attenuated: formerly, they were both extrinsically valuable in economic terms and intrinsically valuable for their own sake; increasingly, they are valuable only for the parenthood experience *per se*. Demographers have traditionally been concerned with the question of why do people want to have **more** children? They are now led to examine an equally intriguing but formerly taboo question: Why do they want to have **any**? (Ebanks). The value of children in industrial society is not in terms of what children can do for parents, but rather that children provide an opportunity to

experience the parenthood role. It is important to examine further the question of the value of children which has been raised and researched by studies at the University of Hawaii (Arnold *et al.*, 1975). Some demographers have interpreted the declining birth rates as evidence of a de-emphasis on parenthood (McVey). Others have suggested that the parents now have only a relatively tenuous and attenuated relationship with their children (Ryder, 1977). In this context, it is important to study why people want children, and what they perceive to be the costs and gains of the parenthood role (Grindstaff).

The vast majority of men and women still want to become parents and are successful at it. Childlessness, especially voluntary childlessness, remains relatively unusual: even rates of childlessness as high as 15% of all couples is low relative to the rates experienced during the Depression (Grindstaff). Most young couples will continue to have at least one child, and will place considerable intrinsic value on the experience (Lapierre-Adamcyk). What may be changing is the idea that in order to experience the full satisfactions of parenthood, one must have many children (Jones, 1980). For example, a woman may have a narcissistic motive to have children for the sake of having the experience of childbirth: however, she may be satisfied with having that experience once rather than two or three times (Lux). The shift in attitudes towards parenthood does not seem to be in terms of questioning the experience *per se*, but in terms of the number of children needed to fulfil parenthood roles. What emerges is an increasingly clear consensus on the two-child family as the ideal. For example, the Quebec surveys indicate that for wives born after 1940, the expected family size is just over two children, an expectation shared by husbands. In the most recent marriage cohorts, those married since 1970, over 50% of persons interviewed expect to have two children (Lapierre-Adamcyk).

In terms of the problem of the replacement of populations, consensus on the norm of a two-child family is not enough. As couples age, their desired and expected family size tends to decline. A number which seems ideal under hypothetical and abstract conditions tends to be scaled downward in terms of the limitations of actual circumstances. If couples begin with an expectation of only two children, their actual fertility is likely to be even lower, leading to a situation where fertility rates are consistently below the level of replacement. To achieve a slightly over two children per family, we need to have a situation in which at least some couples must aspire to a third child.

CHAPTER THREE

SPECIFIC SUBSTANTIVE ISSUES

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At the most general theoretical level, the determinants of fertility involve a plethora of variables many of which, like culture, are difficult to define and virtually impossible to measure. At a more practical level, significant components involve global determinants such as economic conditions or changing sex roles. While input at this level is ultimately necessary for the theoretical explanation and prediction of fertility, in a more practical and immediate sense what is needed is a parsimonious list of intermediate variables which will directly increase our understanding of current fertility in Canada and its prospects for the immediate future (Ebanks). Workshop participants mentioned specific determinants which might be expected to have an impact on that future. Unfortunately, a list of determinants hypothetically associated with fertility could go on **ad infinitum**, and the question of which are the most significant is to a certain extent a matter of individual judgment (Norland). Three categories of determinants will be discussed: those relating to the physical control of fertility; those relating to the achievement of fertility goals; and those relating to the social context in which fertility takes place. In our present state of knowledge, it is unclear exactly how these other determinants might affect fertility, or how important they might be. Hopefully, future research will take account of them as part of the larger perspective on fertility change.

The Physical Control of Fertility

Access to Contraception. According to some researchers, a major factor in fertility in the late 1940s, 1950s, and 1960s was simply the advent of the contraceptive pill, an association which has been demonstrated in several countries, especially Australia. Ignoring the impact of the pill creates a lacuna in fertility hypotheses, because of if is correct that the pill contributed significantly to the advent of low fertility, and if the pill is indeed here to stay, then it follows that lower levels of fertility will also be here to stay (Norland). Of significance also may be circumstances which alter the extensiveness of oral contraceptive use. For example, in 1977 in England there was a "pill scare" following reports of adverse side effects, and resulting in a conjecture regarding the possibility of a subsequent increase in births (Britton).

In discussing fertility in Canada, some researchers feel that the field of contraception is no longer a major problem from a demographic standpoint, and so should not be a research priority (Henripin). Others feel that while in a general sense effective contraceptive use has been demonstrated by the fertility decline, it does not follow from that, that all segments of the population have sufficient knowledge of, or easy access to effective contraception. Data are needed on current contraceptive use

(Beaujot). Of special import are the dynamics of contraceptive use, especially for high fertility populations or for problematic populations, such as unwed adolescents. Such data would of necessity involve an interview study rather than traditional survey techniques (Grindstaff).

Availability of Abortion. Abortion laws in Canada were liberalized in 1969, and from that time the incidence of legal abortions has increased markedly, until in recent years legal abortions equal about one-fifth of the annual total live births in Canada. For example, in 1970 there were 4,300 legal abortions reported, representing about 4% of all live births; by 1979 there were 65,000 reported abortions, representing about 19% of all live births (Wadhera). This reflects an increase in the number of abortions for single women and young women. Of all legal abortions, about one-third are for women under 20, one-third for women 20-24, and one-third for those over 24 (Wadhera).

In Alberta six years ago, the number of illegal abortions was found to be considerably more than the legal ones. If this ratio were to hold for the rest of the country, one might estimate an annual rate significantly in excess of that reported for illegal abortions. However, we do not know with any certainty how many illegal abortions occur, or how their rates are affected by the availability of legal alternatives (Krotki). Since this method of after-the-fact contraception appears to be a significant factor in the outcome of pregnancies, it is important to have these data in order to take this factor into account in predicting fertility.

Access to Sterilization. A factor contributing to the decline of unwanted births is the increased prevalence of sterilization. Women seeking an abortion may also seek sterilization. In a recent study of women over 35 seeking abortions, almost one sterilization was done for every two abortions (Wadhera). Data from the Quebec surveys indicate that couples who have completed their families have, in considerable numbers, chosen sterilization. For example, data are available on a 1976 survey of couples married for the duration of 5 to 15 years who had the number of children they wanted. Of these, about one third had one partner surgically sterilized (Lapierre-Adamcyk). Of couples with two children, about 25% had been sterilized, compared with about 50% of those with four children.

In Quebec, about three times as many women as men are sterilized (Lapierre-Adamcyk). This ratio may be expected to change with an increased trend towards sterilization of men as well (Wadhera). Sterilization demonstrates the sincerity of fertility intentions and more or less guarantees that such intentions will be actualized. However, there may be some persons who later regret their decision and request reversals, a procedure which is becoming more and more feasible.

Sex Preference. Technology may soon be available to allow prospective parents to choose the sex of their unborn child (Williamson, 1978). Such an option may be expected to affect fertility in terms of number of children and of sex differences in birth order (Coombs, 1981). While this variable may be minor, it will likely have some effect on fertility in the 1980s (Grindstaff).

The Achievement of Fertility Goals

Some researchers contend that regardless of how they are achieved, it is fertility intentions which really determine what total family size is going to be (Krishnan). Researchers involved with the Population and Statistical Surveys in the United Kingdom have placed a lot of emphasis on data relating to **expected** family size, and have asked questions about it in general surveys since 1971 (Britton). For realistic projections, we need data on the number of children a woman actually expects to have (Basavarajappa), and on their spacing (Stone). Although there are many fertility surveys, we do not yet have detailed information on fertility intentions. An important additional source of data would be a time series study on fertility intentions, and the relation of those intentions to the course of fertility (Krishnan). Although there are some survey data from Edmonton and Montreal, and from Toronto (Balakrishnan *et al.*, (1975), there are no data on child spacing intentions available for the country as a whole, and this would be a promising area for future research (Krishnan). Such data would considerably enhance current capacity for accurate population predictions (George).

In evaluating the utility of data on birth intentions or expectations, it is important to differentiate between intentions regarding the number of children one expects to have, and intentions regarding their spacing. Data from the United Kingdom suggest that, for a cohort of women who married in the early 1970s, the expectations about the number of children to be born were remarkably stable (Britton). However, data on spacing were more erratic, and led to large fluctuations in the number of births from one year to the next which were impossible to predict with accuracy (Britton).

A significant factor in fertility rates is the "pace" at which children are born. This has often been treated as a residual category, but is in fact important to examine if we are to predict fertility accurately (Ebanks). Each cohort seems to establish a fertility trajectory quite early in its childbearing experience. In this context, the fertility intentions of young persons with regard to spacing would be of special significance and their aspirations would form a basis for predicting the fertility trajectories of those cohorts (Stone). It is important to know the intentions of both men and women, as well as the changing circumstances, such as divorce and

remarriage, which might affect them (Krishnan). Fertility intentions of men may assume special significance if changing sex roles lead to increased participation by fathers in the day-to-day care of the children (Krishnan).

The Fragility of Fertility Intentions. One of the problems of projecting future fertility levels is the uncertainty with regard to the correspondence between intended fertility and its actual outcome (McVey; Lux). Women who indicate they intend to remain childless may eventually have children, either as a result of a change of heart or of an accidental pregnancy; conversely, women who indicate they intend to have children but who intend to postpone that event may eventually remain childless, either as a result of a change of heart or of subsequent fecundity problems. In the same way women who indicate they want very few children may eventually have many, or those who want many may eventually settle for relatively few.

Therefore, data on fertility intentions should take into account not only the expected and/or wanted number of children, but also their expected and/or wanted spacing. However, data from the United States and the United Kingdom suggest that expectations of the timing of the next child are not very useful or reliable (Britton). Aspirations regarding child spacing may be especially vulnerable to the influence of competing aspirations. Implicitly, a change in time table is likely also to mean a change in final performance (Lux). The older one becomes, the more difficult it is to catch up on the things which were postponed, and the more opportunities one has for a change of mind.

Although changes in fertility aspirations could presumably go either way, there is evidence that it is most likely that they are scaled down with the passage of time. For example, in 1971 in Quebec, young wives aged 15-34 indicated high fertility aspirations, expressing a wish for an average of nearly three children. When these same women were re-interviewed in 1976, their expected family size averaged only 2.4. Although there is emergent consensus on the norm of a two-child family, it seems likely that when young couples with this ideal realize their final fertility, they will have had an average of less than two children (Lapierre-Adamcyk).

At least two major factors impact on fertility aspirations: contraceptive use and other life aspirations. In the industrialized nations, where premarital sex is becoming common, women have both the opportunity and the incentive to begin to use contraceptives at an early age. For example, in the United States from 1971 to 1976, sexual activity among never-married teen-age women increased by 30%. By age 19, 55% had had sexual experience. This was accompanied by a dramatic increase in the

use of contraception, the use of the most effective methods, and the more regular use of all methods (Zelnick and Kantner, 1977:55). Such a situation tends to create scenarios in which rather than actively using contraception to prevent births, couples must deliberately seek births by taking affirmative action to stop contracepting (Lux). Under these circumstances, the impact of other factors, such as economic change, is maximized.

A second factor impacting on fertility intentions concerns the competition from other life goals. Family planning is presumably directly related to other aspects of life planning and other circumstances. It would be useful to go beyond life aspirations with regard to family size, and look at other aspirations people have which may conflict with their aspirations with regard to children (Beaujot). Fertility aspirations exist within a network of various aspirations which affect both number and timing. (As an analogy from the field of migration, consider how unlikely we would be to pose the question: "How many more migrations do you expect to have in the course of your life?") (Stone). A better approach would be to ask for fertility intentions in the context of specific scenarios, such as having all of the money one wanted, or having a great deal of assistance (Grindstaff), or having a husband who would promise to look after children and to love them domestically (Krotki). "The more truly planning the couple, the more fragile and changeable their final intentions or plans with regard to their final fertility. Being a true planner means that one's child does not head the list of one's concerns, or that one is preoccupied with many other concerns of similar importance, with the result that the fertility goal is continually being compromised by incidents and accidents of fate" (Lux).

The research on fertility intentions suggests that these statements of intention **per se** are not very reliable predictors of later behaviour. Rather than simply dismissing statements of intention as irrelevant, some effort might be made to establish the conditions under which an individual's statement is more or less a reliable predictor. For example, the predictive power of intentional statements made by a 20 year old, married for two years, with a history of only sporadic contraceptive use may be minimal; however, the predictive power of statements of a 30 year old, married for 10 years, with a history of conscientious contraceptive use, may be very high.

Unwanted Fertility. The perfect contraceptive society is probably only an ideal. In any society, births occur which are not wanted either at a given time, or at any time in the future. Data from Quebec suggest that for the period 1971-1976 there was a considerable drop in unwanted fertility relative to the period 1966-1971 (Lapierre-Adamcyk). Obviously, the availability of contraceptives and abortion has reduced the unwanted fertility in industrialized countries: we need to know, however, if

contraception and abortion are reaching all segments of the population which need them most (Basavarajappa). There are no good data, at the national level, regarding the number of unwanted pregnancies in Canada. Some of these are aborted, but others result in live births. It is possible that unwanted births constitute as many as 10%, 15%, or even 25% of all live births (Ebanks). Exact data are necessary for predicting future fertility, and assessing the potential impact of either a liberalization of abortion laws and policies or vice-versa.

Voluntary Childlessness. In a population with high fertility, the fact that 5% to 10% of couples choose not to have any children is interesting, but has only minimal impact on fertility in general. However, as fertility declines, and as the norm of family size becomes one or two, rather than two or three, the presence of zero parity or childless couples is of more consequence. An examination of the motives and changing life circumstances of these couples may provide insight into the comparable situations of persons who postpone the birth of the first child for an inordinately long time, or who opt to have only one child.

In the recent past, childlessness declined almost to the point of biological minimums, suggesting that voluntary childlessness was very rare (Veevers, 1972). Such low levels suggest that it is almost impossible for the proportion of childless women not to rise again under a new set of circumstances (Lapierre-Adamcyk). The same trends which led to an overall decline in fertility may also lead to an increase in deliberate childlessness, and to an increased acceptance of childless couples (McVey). Childlessness, especially among young couples may be increasing, a hypothesis which remains to be tested (Basavarajappa). A focus on childlessness as a separate area of interest would help to provide the dimensions and parameters of other instances of low parity (Ebanks). Of additional interest is the final fertility outcome of couples who decide not to have children, or who decide to postpone the first child for a long time.

Subfecundity. Many discussions of fertility implicitly assume that all couples are fecund, and that births will occur at regular intervals unless some intervention is made. This may be true for most couples, but not true for all. Generally, a minimum of from 3% to 5% of couples are unable to have children. Others who are not sterile all their lives may become sterile or at least subfecund with advancing age and/or medical problems. For these persons, the problem of fertility control is not to prevent births, but to achieve them. The subfecund encompasses both involuntarily childless couples and those who are parents who have failed to reach their desired family size. We may have something to learn about fertility in general by examining the structural variables and the characteristics of persons who are subfecund (Ebanks).

Subfecundity is potentially an escalating problem because a gradual loss of fertility is known to occur with age. As couples postpone births for increasing periods of time they may find that not every woman remains fertile until menopause, and that a long delay may make conception difficult or impossible. A consequence of a tendency to postpone the first birth, or to have a relatively long time between births, may be that conception no longer readily occurs and the ultimate family size is thereby reduced (Veevers).

One way of being subfecund, in the sense of not being able to achieve one's fertility goals, is to have the desired number of children who subsequently die at an early age. It was suggested that infant mortality is correlated with fertility, because those subgroups in our population who have the highest rates of infant mortality also have the highest rates of fertility. This is perhaps more apparent for developing nations, but is also worthwhile to discuss in a Canadian context (Grindstaff).

The Social Context of Fertility

Adolescent Fertility. As fertility in general has gone down, the proportion of all babies born to one particular subgroup, adolescents, has increased slightly from 8% in 1959 to 9% in 1979 (Nagnur, 1980:2). Teenage mothers are increasingly likely to keep their babies: in the 1960s, about 25%, now nearly 80% (Grindstaff). The social and economic dynamics surrounding teen-age fertility should not be left only to social workers, but should also be of concern to demographers.

Cohabitation. Not much is known about the patterns of premarital fertility. We do not know if we are approaching the patterns found in countries like Sweden and Denmark where a significant proportion of unmarried males and females regard living together as a period of experimentation and reject the necessity of the legal formality of marriage (Basavarajappa). Some people contend that changing life styles and living together have relatively minor impact on fertility and parenting (Grindstaff). However, it seems at least plausible that nonconventional living arrangements would selectively attract nonconventional persons, and that the situation itself would have some impact on fertility decision making (Wargon). For example, a 1980 survey in Quebec of all persons 18 years and older found that couples who were not legally married but who were living together appeared to want a slightly lower number of children than legally married couples (Lapierre-Adamcyk). It may be that couples who are in consensual unions are more likely not to want to have children, or likely to postpone having children until such time -- if ever -- when they legally marry (McVey). Since some

of the most significant fertility measures are those relating to length of marriage and whether or not couples fall into a conventional status category, it is important to find a way of pinpointing the time at which they begin to live together (Henripin).

Although the prevalence of cohabitation is not precisely known, it appears likely that the number of consensual unions is increasing. Estimates from the United States suggest that of all couples living together, at least 2% are living common law (Westoff, 1978:54). Among young couples where the husband is under 25, the rate may be as high as 7% (Grindstaff). Data reconstructed from the recent Census suggests that between 3% and 4% of Canadian couples are involved in consensual unions (Norland) and eventually data on their characteristics will be forthcoming (Norland, 1981). In the description of Canadian fertility, and in the prediction of future trends, it is important to know the prevalence of common-law union, and the characteristics of persons involved in them (Grindstaff). It may also be important to differentiate among kinds of cohabitators. Some reluctantly choose this alternative because one partner cannot get a divorce or does not wish to do so; some regard it as a "trial marriage" which if all goes well will be a prelude to marriage; and some opt for this alternative deliberately either because they have little faith in the permanence of marriage *per se*, or at least little faith in its permanence with their current partner (Norland). Presumably the consequences of cohabitation for fertility decision-making will be different under these different circumstances.

Availability of Housing. For some persons, the perceived availability of suitable housing may be a factor in fertility decision-making. Home ownership still seems to be increasing by generation, and many young persons may put home ownership as a higher priority than having children (Beaujot). This factor may become more significant in the future, as housing becomes more expensive both in terms of initial purchase price and of subsequent high mortgage payments due to high interest rates. Moreover, the perceived cost of housing may be a factor in more wives working in order to meet home-owner expenses (Beaujot), and in future years may underline the significance of income on fertility (Wargon). Alternatively, persons may choose to double up in multiple family dwellings, thereby tending, as in the Depression, to lower fertility (Wargon).

Decline of Primary Marriages. A great deal of fertility research, perhaps most of it, has focused on the traditional context for childbearing, involving young women who have been married only once. In considering the question of the viability of the contemporary family in light of high divorce rates, it was pointed out that the dissolution rate of marriages in the 1920s was approximately what it is today, except that then the

disruption was due to death rather than to both death and divorce (Grindstaff). While the totality of marriage disruption may have only changed recently, the impact of it on fertility may be quite different. A complex marital history is known to be associated with a relatively low average family size. The incidence of primary marriages is in fact declining. For example, in Canada in 1927, of all marriages, 87% were primary ones; others involving the remarriage of the widowed, and less than 2% involving a divorced person. The incidence of primary marriages remained consistently high for many decades: for example, in 1967 it was still 88%, although the proportion involving divorced persons had increased, and the proportion involving widows had declined. Since the change in divorce laws, and the concomitant upsurge in divorces, the proportion of marriages involving single persons went down to about 75% in the late 1970s. In British Columbia, where divorce rates are higher than for the rest of the country, primary marriages constitute only about two-thirds of all marriages, leaving one-third in which fertility decision-making is complicated by a complex marital history. In British Columbia, 2 marriages in 10 now involve at least one divorced person, and another 1 in 10 involves 2 divorced persons (Veevers, 1981).

The remarriages of divorced persons are earlier than the remarriages of widows and widowers, and presumably are also different in other ways as well. It is not known how the fertility decision-making in reconstituted or blended families is different from that in other families. For example, in some instances, persons whose fertility aspirations were apparently fulfilled in the context of their first marriage may find that the second marriage requires a new baby as a symbol of involvement in the new family unit. Given the fact that people with complex marital histories will soon constitute at least one-third of all couples, more research is needed on the import of blended families for fertility decision-making (Veevers).

CHAPTER FOUR

GAPS IN THE DATA: WAYS AND MEANS OF MAXIMIZING AVAILABLE DATA

WAYS AND MEANS OF MAXIMIZING AVAILABLE DATA

Having identified concerns in a number of areas related to fertility and its future, and having indicated areas in which we do not yet have sufficient data to make informed pronouncements, the question arises of how to fill the apparent gaps in the data. Workshop participants alternated between two fundamental strategies: an effort to maximize presently available data and a consideration of strategies whereby new data might be generated. The maximization of available data centered around two approaches: the full use of vital statistics data, and some suggestions for its improvement; and the possibilities of record linkage of vital statistics data with other data bases.

Maximizing Vital Statistics Data

Available Data. Nagnur presented and discussed the forms used by the various provinces in the registration of births, which are the only input for the vital statistics on parturition. The data collected are relatively consistent from one region to the next, with the exception of Newfoundland where only minimal information is gathered. Data are either presented in machine-readable form or are converted to it by Statistics Canada. A repository of records goes back to 1921 (Nagnur).

One advantage of birth registration data, as a recent quality assessment study indicates, is that the quality is in fact very high. Coverage is almost complete, so that in most provinces one can say with confidence that it is in excess of 99% (Nagnur). A major factor contributing to this excellent coverage is the fact that every mother (or surrogate mother) of a Canadian child is eligible for a Family Allowance from the Department of Health and Welfare. However, each application for an allowance must be verified by the presentation of a birth certificate, a major incentive to complete the birth registration form within the prescribed nine month period (Silins). As a result, undercoverage of births is negligible. For example, in Quebec, registration data banks have been interfaced with records from the Health Insurance Board (which pays physicians for deliveries) and with Family Allowance records. Undercoverage might result from children being born at home, but in Quebec only a few tenths of a percent of all deliveries are not in hospitals. In 1979, of approximately 100,000 births in Quebec, only about 200 were not reported. It is also possible to miss some births when children die at a very young age, but a check with mortality records showed that only about 150 births were missed in this way (Lachapelle).

Improving Available Data. In their use of vital statistics as raw data sources, demographers tend to forget that the forms involved are primarily legal documents, with their utility for social scientists being of secondary importance. The process is overseen by the Vital Statistics Council, which meets annually, to discuss both administrative issues and statistical questions. The Council tends to be conservative, but some changes in forms do occur. The last revision was in 1969, but another revision is expected in the near future. Hopefully, demographers could make a strong case to this body to have the forms changed and expanded (Silins). In addition, birth registration forms may be revised by other agencies, as for example in Quebec by the Human Rights Commission, and issues not directly related to birth *per se*, such as income may be considered a misuse of the questionnaire (Lachapelle).

Apart from legal aspects, improvements in the extensiveness or the quality of birth registration data are hampered by some logistical difficulties. While it might be useful to administer an extensive questionnaire to a woman just after childbirth, the after hours of labour may find her especially unreceptive to the interview process. Forms are filled out by a wide variety of persons some of whom have at best dubious qualifications. Since these persons are not employed for this task, they are not accountable to Vital Statistics and hence are not amenable to control or supervision (Lachapelle).

(a) The Problems of Newfoundland. One specific problem with birth registration data is that tabulations of births for Canada generally exclude Newfoundland because of the very limited nature of the data which are collected there. In the next year, there may be an introduction of a physician's certificate of birth, which may fill in some of the existing gaps. Alternatively, it may be possible to use a system of fertility models to reconstruct age-specific rates for Newfoundland, an experimental process is still in progress in Alberta (Krishnan). Another strategy may be to collect birth data from hospitals directly. Since a significant proportion of births in Newfoundland take place in hospitals, fertility rates could be derived from their records (Nagnur).

Last year, the Canadian Population Association passed a resolution requesting Newfoundland to provide additional information, particularly on age of mother, but no action seems to have been forthcoming (Krishnan). It is to be hoped that this issue will again be raised, and will be on the agenda of the forthcoming meeting of the National Vital Statistics Council, with the result that changes occur and the Newfoundland data will finally be made to correspond with that for the rest of the nation (Krotki).

(b) The Problems of Quebec. Birth registration data for Quebec has been particularly problematic, in that before 1975 declarations of birth were completed by clergymen or town clerks, and so data on length of pregnancy or birth weight were unreliable (Lachapelle). As of 1975, the entire system was modified so that births were reported by hospitals but were also required under the civil code to be officially registered by the clergymen at baptism, or by the town clerks at the child's civil registration. The result was a number of duplicate counts during the 1975-76 period. Computer programs have now been set up which effectively eliminate the possibility of double counting.

(c) Time Intervals. The birth registration forms do not include age at marriage, or generally any data on the intervals between successive births or between first birth and marriage. At present, therefore, it is not possible to construct duration-specific rates or other such measures (Nagnur). It was suggested that Vital Statistics should produce cohort fertility measures on an on-going basis, both retrospectively and prospectively (Beaujot). Such cohort measures will probably be available by 1982 (Nagnur). Accurate fertility projections are facilitated by the availability of parity progression ratios. Such ratios could be produced for census years from data on number of children ever born to women ever married. If appropriate surveys were available, these ratios could also be calculated on an annual basis, providing further refinements for population forecasting.

(d) Illegitimacy. In spite of increased access to effective contraception, Canada has witnessed a significant increase in the number of conceptions and births before and outside of marriage. We need to know if the trend is real, or just a reflection of different data collection procedure (Basavarajappa).

Until 1973, birth registration forms included information on legitimacy status. In 1974, the Vital Statistics Council found that the information on legitimacy status was incomplete in some provinces, and did not present a realistic picture. For these and other "pertinent reasons" it was determined that the tabulations on legitimacy should be deleted (Nagnur). In their place, tables were produced by marital status of the mother, leaving one response category as simply "unstated" (Nagnur). In Ontario, where the terms "common-law marriage" and "separated" are not used, it is unclear how the marital status of the mother is recorded (Grindstaff). In these instances, it seems likely that the persons in common-law unions are included in "single", whereas separated persons appear as "married" (Nagnur).

In considering the social meaning of illegitimacy, it is important to note that while legally all children born to a married woman are considered legitimately the children of her husband, in **de facto** terms legitimacy implies that the child's biological parents are married to each other. On most current birth registration forms, the question is asked: "Is the mother married?" If the answer is yes, it is often neglected to also ask the next question, namely: "Are the parents married to each other?"

The reasons for dropping questions relating to the mother's marital status are to some extent understandable. Nevertheless, the fact of illegitimacy rates is an important contribution to fertility in general, and should be an on-going element of our knowledge (Beaujot). This seems especially vital for the rates of teen-age mothers, which may vary considerably by province and by social class.

(e) Sociocultural Variables. Another limitation of birth registration data is that, with the exception of Quebec, data on socio-cultural variables, such as language, mother tongue of parents, home language, and education of mother are not collected (Beaujot). Collecting these additional data for all provinces for all births would be expensive: an alternative would be to ask additional questions on a sample basis from which provincial estimates could be made (Krishnan).

(f) Male Fertility. The study of fertility has traditionally focused on women, to the virtual exclusion of comparable work on males. An exception is the Quebec study where the husbands of women under 35 years of age were interviewed (Henripin *et al.*, 1981). However, such interviews were less detailed than the comparable ones for women (Lapierre-Adamcyk). Recent studies have appropriately expanded their focus of concern to include men, as for example a proposed study of acceptability to men of various forms of contraception (Smith). In 1980, a representative survey of persons over 18 in the province of Quebec included 980 men who were asked in telephone interviews about the number of children they had and their future fertility aspirations (Lapierre-Adamcyk, 1981). Preliminary data suggest that men, like women, are reluctant to return to large families, and that they tend to share the female preference for the two-child family (Lapierre-Adamcyk). These limited data need to be expanded to include information on the role of the male in fertility decision making (Grindstaff). In birth registrations, the question of the number of children is usually asked of the mother. A simple way of providing data on male fertility would be to ask this question of the father, hopefully along with other variables such as occupation (Smith).

Exploiting Existing Data. Birth registrations provide data on a number of characteristics of the pregnancy and the neonate, such as duration of pregnancy, birth weight, stillbirths, and multiple births. These data have been exploited by physicians for studying late foetal mortality, perinatal mortality, and neonatal and postneonatal mortality (Nagnur). However, they do not appear to have been fully exploited by demographers (Nagnur). It was suggested that birth weight and duration of pregnancy might be used as indicators of prenatal health, especially since the traditional indicator, infant mortality, has declined to a point where it is no longer a sensitive indicator (Collishaw). In reply, it was noted that infant mortality may still be a sensitive and valid indicator even in the Canadian context (Grindstaff), in that some sub-groups have rates four to five times the national average (Basavarajappa). Studies at the University of Alberta have related birth weights to prematurity and immaturity, and to infant mortality (Krishnan). In British Columbia, an attempt has been made to use births and deaths as symptomatic indicators to produce estimates for small areas, but the rates for small areas were very unstable and the relationship between vital events and population change was weak compared with other possible indicators (Verma). In Quebec, data on birth weight have been used to examine a number of issues, including the impact of mother's smoking (Lachapelle).

Record Linkage

One way of maximizing vital statistics data is to link them with corresponding years of the Census or other data bases. The methodological know-how for such procedures now exist, making record linkage technically feasible (Nagnur). Rigorous procedures to guard information on the individual have been developed which can satisfy a lot of the potential criticism about breaches of confidentiality (Collishaw). The major problem is one of cost, which in many instances, appears prohibitive (Nagnur). However, it remains important to maintain the high quality of data for vital statistics, and to continue to code them and make them available at least in computerized form if not in published tabulations, so that when more funds are available or when costs are reduced, further analysis along these lines will be possible (Collishaw).

Mortality Data. A study at University of Western Ontario has linked infant deaths with corresponding live birth certificates, finding on occasion that if death occurred very early there may be a death certificate but no corresponding birth record (Grindstaff). Mortality data on babies are of limited use for examining social class, in that the occupation of the baby is simply "baby". An alternative strategy, again being tried at the University of Western Ontario, is to try to find the father in the city directory, and thereby obtain some idea of occupation and hence of Socio-economic status, (Grindstaff).

Occupational Data. One area in which research involving record linkage is very active involves the follow-up of persons who, in the course of their work, have been exposed to potentially dangerous substances. These persons are followed, and eventually their files are linked to death registration data giving specific causes of death (Silins). Particularly noteworthy was a study by Dr. Newcombe for the Canadian Atomic Energy Commission. When Dr. Newcombe retired, access to the records for that particular study was stopped, some files were returned to the Department of Vital Statistics of British Columbia (Smith).

Family Allowance Data. For every family in the receipt of Family Allowance, detailed data are available by province for the number of children, their ages, and their exact dates of birth. Potentially, these data might be used to calculate the intervals between successive births, parity-progression ratios, and other indexes usually requiring survey data. Since January 1981, these data are available on CANSIM (Canadian Socio-Economic Information Management System) base which provides data for subprovincial units. This new data source is not well known and has not been widely used, but it has considerable potential for demography and other fields (Hache).

The Canada Health Survey. The report of the Canada Health Survey on **The Health of Canadians** (Health and Welfare Canada, 1981) is available in summary form. Although it does not have many items on fertility or family planning, it does have items concerning socio-economic status and background variables which could be used to link with birth records, providing an alternative to the Census (Coombs).

Marriage Data. One useful strategy is to link marriage certificates to subsequent birth registrations. For example, in British Columbia, Newcombe and Smith developed a data set, beginning in 1947, which followed this procedure and thereby reconstructed whole families. These data are currently at the University of British Columbia (Silins). In 1970, this study linked marriages to births and then examined other variables such as the religion of the couple and their age at first birth. Comparisons were made for 1951 and 1961 to assess the impact of religion on use of oral contraceptives. This project is now being expanded to test the feasibility of looking at multi-generational effects; on the marriage record the identity and the birth-place of the couple's parents is indicated (Smith). Linkage with marriage records would provide persuasive if not perfect evidence of premarital pregnancy rates, as well as other information such as spacing of births and social class. This strategy might prove fruitful, less expensive than other record linkages (Krotki). It is noteworthy that demographers have not sought access to this valuable data base (Silins).

CHAPTER FIVE

GAPS IN THE DATA: WAYS AND MEANS OF GENERATING NEW DATA

WAYS AND MEANS OF GENERATING NEW DATA

Expanding the Census

If gaps in the existing knowledge about fertility cannot be filled by the more careful and systematic use of existing sources, it becomes necessary to consider new alternatives for producing the required data. An ideal solution would be to expand the content of the Canadian census. However, there is a growing awareness of census costs, to the point where some have suggested that it may be "pricing itself out of the market". Counteracting this orientation is the observation that, although the absolute cost of the census is increasing, with inflation and a rise in other government spending, the relative costs may be stable or actually declining (Krotki). Be that as it may, as government budgets continue to tighten, the impetus is towards a shortened census form, and it becomes problematic to maintain even those items which are already there. In pragmatic terms, the prospect of additional questions is virtually impossible (Ebanks). Even in the best of worlds, it seems unlikely that a census format could address the kinds of social-psychological items which seem to be vital in accounting for the variance in fertility which so far has eluded our explanations. For example, the questionnaire in the Quebec study was extremely extensive and used in-depth interviewing techniques. Apart from the prohibitive cost, it would not seem appropriate for a federal statistical agency to obtain that kind of information (Wargon).

A small change in census procedures which would be of great value at no additional expense would be a change in the extensiveness of the question on number of children ever born. This question is now addressed only to women who are currently married, or who have ever been married. This procedure may in fact encompass a number of illegitimate births, if the out-of-wedlock mothers eventually marry (Basavarajappa). However, it does not provide the necessary statistics for looking at past and present illegitimacy, or at the characteristics of the mothers of illegitimate children (Romaniuc).

One area in which the census data could be usefully expanded concerns questions relating to cohabitation. These data would be useful not only for calculating its effect on fertility decision making, but also for estimating the actual number of families and households, and for weighting sample survey results (Basavarajappa). Discussions of questions pertaining to cohabitation to be considered for the 1981 Census revealed this issue to be sensitive, and attempts to add items concerning it were unsuccessful. However, if a strong academic interest were to be forthcoming, some change might still be considered in time for the 1986 Census (Norland).

If census content cannot be altered, it can sometimes be manipulated to produce more information than is currently available. Current work on cohabitation reflects such a creative approach. Up to 1976, common-law spouses were asked to record themselves as married (Basavarajappa). However, when persons are allowed to write-in their relationships, they provide entries such as fiance, girlfriend, or common-law wife, which suggest a consensual union. In these instances, it is possible to confirm that the household involved does have two persons of the opposite sex of marriageable age (over 15) living together, and if so, to assume that they are cohabiting. In addition, persons who report themselves as single can be processed as in the United States, where two unmarried persons of marriageable age living in the same household, are assumed to cohabit. Using these kinds of techniques, a preliminary estimate is that, between 3% and 4% of couples are living together unmarried (Norland). Given sufficient time and resources, to work with unedited data, one could eventually derive the characteristics and the fertility of this population; and more data in this area will likely be forthcoming (Norland, 1981) with respect to 1981 Census.

For most fertility-related problems, the expansion of the Census or its manipulation does not seem to be a practical solution. In the quest for additional data, five other strategies were discussed: a national fertility survey; a general purpose survey by Statistics Canada; a number of commissioned surveys; the possibility of telephone surveys; and finally an extension to the existing Labour Force Survey.

The National Fertility Survey

In almost all discussion of fertility in Canada, one of the first alternatives to be suggested is the long-awaited prospect of a National Fertility Survey (NFS). Such a project would potentially be a very useful vehicle for more general information (Krotki), and would fill many gaps in the data, in the same way that special surveys have provided additional data for Quebec. Of special importance would be national data on fertility intentions, which may be crucial in predicting the future course of fertility. While some data on fertility intentions are available, we cannot accurately infer the Canadian case from studies based on selected populations, such as those in Quebec and British Columbia, which are unlikely to be typical of the country as a whole (Krishnan). While a NFS may not be needed for testing specific theories of fertility, it would be a valuable information-gathering technique which would cast light upon the conditions of Canadian society at a given point in time (Ebanks). Some proponents assert that we do need such a survey, and need it on a regular basis (Ram); others tend either to demur, or to offer active opposition (Verma).

The cost of a NFS may be prohibitively expensive and efforts to have one funded have not so far been successful. In 1977, and again in 1978, a NFS was proposed by a group of demographers at the University of Western Ontario (Professors Balakrishnan, Beaujot, Birch, Ebanks, Grindstaff and Gillis). Their submission to the then Canada Council for some \$2,100,000 over a five year period was rejected a year later. The cost of a similar project at the present time would of course be markedly higher. It is noteworthy that in such instances funding for a single year would have been equivalent to all of the funds in the SSHRC (Social Science and Humanities Research Council) program grant (Ebanks).

An intermediate strategy in an attempt to get a NFS funded would be to appeal to Health and Welfare, or to SSHRC, to get fertility defined as a research area of strategic importance, in the same way that **aging** has been (Ebanks). This seems especially plausible in that in actuality, the Canadian population is aging **because** of low fertility, and the two topics are therefore intrinsically related (Krotki). People need to be convinced, that if fertility is not at least at the replacement level, the resulting population pyramid is going to become top-heavy, and therefore prone to crumble, and it is therefore necessary to know more about fertility levels (Krishnan).

The General Purpose Survey

If an exhaustive NFS proves unfeasible, an alternative which has been discussed is a general purpose survey by Statistics Canada, involving about 5,000 respondents. Such a survey might have some input from demographers to collect data specifically relevant to their concerns (Romaniuc). A sample size of 5,000 or 6,000 would seem to be ample for many of the needs of a fertility survey (Krotki). However, if one wants to go beyond straight forward data with essentially yes/no dichotomous responses to a more elaborate analysis involving extensive cross-classifications, then larger samples are required (Coombs).

Another possibility is the creation, within two or three years, of a general social survey capability within Statistics Canada. This would involve a small-scale survey with a set of core items plus a rotating agenda, and would allow researchers to examine a variety of issues in-depth. Fertility and fertility intentions might be suitable subjects for such a survey (Fellegi).

Private Surveys

If a comprehensive NFS proves to be impractical, one alternative would be smaller-scale studies done by individual researchers or small research teams. The costs of such separate studies, however, can be quite high. For example, in the 1971 survey in Quebec, the cost of at-home interviewing of 1,745 women was about \$70,000. The 1976 survey which was complicated by the need for careful tracing of respondents, interviewed only 450 people and cost about \$30,000 (Lapierre-Adamcyk).

If private research studies were to be done, the ideal would be longitudinal studies. Information from cross-sectional studies is valuable but intrinsically limited. The problems to be dealt with in longitudinal studies involve not only the excessive expense, but also the high level of skill required on the part of researchers to develop research strategy and instruments which will remain valuable and practical over time (Grindstaff).

An alternative to individual private surveys, is to commission survey research companies, such as the Gallup and Roper Polls to add fertility items to their existing questionnaires, which already solicit information on a number of basic demographic variables. Such a strategy would involve a relatively low cost. For example, a study on ethnicity involving five or six additional questions and administered to a random sample of 3,000 people 15 years of age and over across the country would only cost in the neighbourhood of \$9,000. If fertility questions could be equally parsimonious, this would be a good alternative. Survey institutes, such as the one at York, would be more expensive, but still probably less costly than individual researchers undertaking such projects themselves (Grindstaff).

Telephone Surveys

Although telephone surveys may not be as effective as face-to-face interviewing, they are substantially less expensive, and recent studies in other areas, such as victimization, have confirmed their feasibility (Coombs). In some instances relating to sensitive issues, the telephone may in fact prove to be an advantage, because it increases anonymity (Coombs). Since most Canadians (90%) have a phone (Coombs) it seems they might be receptive to a telephone interview on fertility and family planning (Grindstaff). In a 1980 study in Quebec, there were practically no non-respondents (Lapierre-Adamcyk). The research strategy might involve an entire interview by phone, or a mailed questionnaire to be completed over the phone (Grindstaff). Technical problems will be partly

resolved by the coming use of computer-assisted terminals with considerable cost savings (Coombs). For example, the 1980 Quebec survey was able to obtain telephone responses to 6 questions from 2,055 respondents, piggy-backed with other research, for only \$2,500 (Lapierre-Adamcyk).

The Labour Force Survey

Given the high cost of survey research, an alternative to the NFS or to private research would be to piggy-back fertility questions onto the Labour Force Survey (LFS) (Ram). The relationship between fertility of women and their labour force participation is readily documented, even if the cause-effect pattern is not well understood. Birth spacing, birth orders, and fertility aspirations are directly related to women's desire to work, as well as their capacity to do so. From this standpoint, an employment survey is a logical place to ask questions pertaining to fertility status and intentions (Lux).

The LFS has been conducted monthly since 1953, and covers all Canadians except those living in the Yukon or Northwest Territories or those in institutions or on Indian reserves. (An extension of the LFS survey to include these populations is under consideration.) The current sample size is 55,000 households a month, involving approximately 120,000 individuals. Supplementary questions added to the LFS should be of a nonemotive nature so as not to disrupt the survey itself (Coombs). Additional questions are usually funded by another part of government, although it is theoretically possible to include questions from private organizations; this has been done from time to time when additional funding was available (Coombs).

Projected costs vary with the piggy-back technique involved. The simplest strategy is to have a supplementary questionnaire, printed on an 8" by 14" sheet, administered by the same interviewer to the same respondents of the regular LFS. Depending on the development work involved, the cost would be about \$100,000 to \$130,000 (including both data collection and production of an edited file), which corresponds to about \$1.25 per household. A supplementary questionnaire designed to tap only a particular sub-population, for example young females, would reduce costs somewhat. An alternative is to have a self-administered questionnaire of 4 or 5 pages presented to the respondent by the interviewer and subsequently collected in 3 or 4 days. If this were to be done in conjunction with the LFS, the cost would be in the range of \$350,000 to \$400,000 (Coombs). Another strategy which might reduce costs while retaining the basic effectiveness is having an interviewer drop off an additional questionnaire of perhaps 4 or 5 pages which would be self-administered,

but which would then be mailed back rather than collected. Another alternative is to have a separate questionnaire both delivered and collected by the LFS. If it was desired to have a separate sample which had not been exposed to the LFS, the cost would be in the range of \$700,000 to \$800,000 (Coombs).

If some version of a piggy-back on the LFS were to be done, the question then arises of how large a sample is needed, and how often it would have to be repeated. A committee could usefully be struck to decide if an additional form given once every 2 or 3 years would be sufficient, or if once a year would be required (Krotki). One way of achieving a relatively large sample size with minimal cost would be to combine annual data as has been done in the United Kingdom. For example, data collected on only 5,000 women a year would provide data on 25,000 women over 5 years (George). An advantage of a continuing survey is that the number of cases with specific traits would be large enough for detailed analysis. In some instances, it may be to one's advantage to have minimal information with a very large data base. For example, in the United Kingdom data are available on birth expectations for some 35,000 cases, which permit extensive analysis, and which were collected not in single survey but from the summation of independent surveys (Britton). The advantages of a panel study compared with a new sample every time leads to a discussion of the Quebec study by Henripin and Lapierre-Adamcyk. The ideal solution might be the creation of a base sample in which every time there was a rotate-out a new case was added, enabling one both to monitor the same people and to add those joining the cohorts (Lapierre-Adamcyk). One advantage of a panel is that one can trace changes in expectations over time, and monitor the extent to which expectations are actualized, both of which suggest that one should not place great confidence in verbalized expectations. A satisfactory strategy would be to have a survey every three years, with both a panel of continuing persons and a sample of new persons (Henripin).

One limitation of a LFS piggy-back is the understandable desire to avoid controversial questions and the potential of subsequent disruption of the main survey. One solution to this problem would be to administer fertility questions only to those who are rotated-out of the LFS, which would be 1/6 or more of the total (Beaujot). Even 1/6 of 55,000 would be about 9,000 households, which is more than the usual number for a fertility survey (Krotki). This strategy would not be perfect in that it would not allow for longitudinal studies, but given representative samples there are special techniques which could partly overcome this, and one would obtain a large amount of adequate information at a minimal cost (Ebanks). Splitting the sample in this way does of course reduce costs, but not in a directly linear way (Coombs).

If a piggy-back questionnaire were to be added to the LFS, much would depend upon the appropriateness of its content and the sophistication of its wording and design. The formation of the questionnaire might best be left to an **ad hoc** committee which would examine in detail all aspects of the proposed research, and which would then prepare a specific proposal that could be satisfactorily defended in terms of both academic and pragmatic priorities (Krotki). The resulting data would be "modest", in the sense of addressing only a small number of social-psychological variables known to be important for the description and prediction of fertility, but even such a modest step would substantially increase the information that we have to date (Krotki).

In considering the option of adding items to the LFS, it must of course be taken into account that the capacity of the LFS to carry piggy-back questions is limited, with the result that adding fertility questions may prevent or at least delay other researchers who wish to pose other equally important questions. Commitment to such research involves ultimately a question of priorities. Items for such a survey would need to be defended both to Treasury Board officials and to the general public. A proposed research agenda would have to establish not only that the requested data are presently not available, but that there is a strong and persuasive rationale for why they should be created. Such a rationale should of course have a sound theoretical basis, but also should have substantial pragmatic considerations and policy implications as well (Fellegi). If demographers wish to obtain cooperation for a proposal such as a piggy-back of the LFS, they must persuasively answer the nitty-gritty question: "In order to carry out such a survey on a continuing basis, which involves the expenditure of two or three hundred thousand dollars, it is necessary to stop spending two or three hundred thousand dollars on something else. What are the critical pieces of information, and why is it important to have them?" (Rowebottom). The proffered rationales need to be not only academically sound, but also politically saleable (Fellegi).

CHAPTER SIX

SUMMARY OF RECOMMENDATIONS

SUMMARY OF RECOMMENDATIONS

Many recommendations, both general and specific, were put forth during the course of the Workshop. It is convenient to discuss these recommendations in terms of three kinds of suggestions: **first**, those relating to the areas in which more information was felt to be needed; **second**, those relating to ways in which existing vital statistics might be further utilized or improved; and **third**, those relating to ways in which additional data might be more effectively collected.

The Content of Future Fertility Research

Some areas of concern to demographers have been researched extensively; others have tended to be ignored. In considering the phenomenon of research on Canadian fertility, participants suggested that attention should effectively be directed to eight specific topics. Where appropriate, references are given to pages in the text where these specific topics have been discussed at greater length.

Social-psychological Variables. Structural variables continue to account for about 40% of the variance in explaining fertility differentials (p. 28). Since these differentials are declining, cultural variables seem of limited utility beyond the dimensions of ethnicity, language, and mother-tongue (p. 29). It now seems desirable to expand research concerns to include social-psychological and personality variables (p. 30). Ideally, the study of subjective dimensions would draw on in-depth interviews, and would include longitudinal studies which would permit analysis of cause and effect, and which would provide data on the stability of such variables over time.

The Parameters of Fertility. Although in-depth psychological studies may be the ideal, in pragmatic terms these may be difficult or impossible to assess with structured interviews administered to a large sample. The first research priority is simply an accurate description of the fertility behaviour of Canadian women, married and unmarried. It would include a complete **pregnancy history** which would provide detailed data on birth intervals and would permit estimates of the significance of legal and illegal abortions (p. 42). It would also include a **birth control history**, which would provide data on the effectiveness of contraception, on the prevalence of unwanted births (p. 45), of subfecundity (p. 46) and of sterilization (p. 42).

Fertility Aspirations. Specific questions could differentiate between general cultural ideals (How many children do you think is the ideal family size for most couples?) and individual preferences (How many children do you want to have?). These ideals would then be supplemented by the more relevant questions of actual expectations of number of births (How many children do you expect you will actually have?) (p. 43) and of their spacing (When do you expect to have your next child?) (p. 43). If the parameters of fertility could be assessed on a longitudinal basis, it would be possible to assess the extent to which fertility ideals and expectations are actually reflected in subsequent fertility behaviour. This information is crucial for accurate predictions (p. 44).

Male Fertility. Researchers have tended to ignore the study of male fertility. A starting point would be the simple description of correlates of the number of children to fathers. The parameters of fertility might usefully be expanded to assess the contribution of husbands to the formulation of fertility aspirations and their influence on actual outcomes, with special attention to the impact of the changing roles of men (p. 56).

Atypical Groups. There appears to be an emergent consensus on the ideal of the two-child family (p. 17). At a period of low fertility, the balance for fertility trends may well depend upon those atypical groups who elect either to have no children or to have many more than usual. The identification and description of the kinds of groups which deviate from the dominant fertility patterns would be useful both in explaining fertility changes and in attempts at intervention (p. 25).

Marital Status and Marital History. A major factor in fertility is a woman's marital status. Fertility data on all women would provide needed information on the extent and circumstances of illegitimacy (p. 53) and on the impact of cohabitation (p. 47). Although there are census data on marital status, there are no data on marital histories. A systematic survey is needed to assess actual marital histories and to relate complex patterns to differential fertility. If such a relationship were known, it would then be possible to introduce simulation models to predict the effects of changing definitions of marriage and of rising rates of divorce and remarriage on fertility (p. 36, p. 48).

Economic Well-being. One factor in fertility decision-making appears to be the individual's perception of living in affluent times in a state of well-being (p. 22) or of living in hard times in a state of deprivation (p. 22). There is no consensus at whether people perceive themselves to be increasingly deprived or well-off, but it seems possible that the decline in fertility is related to feelings of relative economic deprivation. It is

important to operationalize this dimension, and to assess which segments of the population feel affluent (and hence desirous of more children) and which feel economically stressed (and hence are desirous of limiting their family size).

Women's Economic Opportunities. Easterlin asserts that fertility is tied to economic opportunities for women, a contention not borne out by Butz and Ward (p. 19). It is important to test further the applicability of these hypotheses for Canadian data by assessing the correlation of actual fertility and various indicators of female labour force participation.

Women's Economic Roles. In the past, most wives did not work, and those who were in the labour force were mainly there in response to dire economic circumstances. Contemporary definitions of marriage suggest a situation in the immediate future in which most wives will work, whether or not they "need" additional money (p. 31), with the only significant exception being mothers of pre-school children (p. 27). Data are needed on the extent to which these definitions are endorsed by Canadian couples. In predicting fertility, it is important to assess the impact of changes in the availability and cost of alternative child care arrangements. The key issue of whether women work and therefore restrict fertility, or restrict fertility and are therefore free to work, can be resolved only by longitudinal studies (p. 31).

Working with Vital Statistics

The workshop generated some specific recommendations related to working with vital statistics, beginning by reiterating the plea that fertility data from Newfoundland be expanded to correspond to the rest of Canada (p. 54). A very useful addition to vital statistics publications would be the production of cohort fertility rates, which will probably be available by 1982 (p. 54). Also of considerable utility would be parity progression ratios. These can now be calculated from data on the number of children ever born to women ever married, but unfortunately are available only for census years. If systematic surveys were conducted, parity progression ratios could also be calculated for the years between censuses, and would provide further refinements for fertility forecasting (p. 54).

The availability of vital statistics in computerized form would be of great significance for potential research involving record linkage (p. 57). The mechanism to link data on live births to marriage data already exists, and if exploited, would provide an alternative way of estimating the interval between marriage and first birth, thus providing data on the extent of premarital pregnancy (p. 58).

Adequate statistics on the incidence of illegitimacy have not been produced since 1973 (p. 55). In assessing illegitimacy, it is important to distinguish two kinds of illegitimate births: those in which the mother is not married; and those in which the mother is not married to the father. In this perspective, it is important that on existing forms, the question "Is the mother married?" be followed by also asking a second question, which is frequently ignored, namely: "Are the parents married to each other?" Where direct data are not available, it is important to produce and publish reliable estimates.

Although illegitimacy may be a sensitive topic, knowledge of the incidence of illegitimate births is an important social fact, of direct relevance for assessing the need for various kinds of specialized social services, and of indirect relevance as an indicator of social change. It is hoped that in the future, relevant data concerning illegitimacy will be generated and the tabulations reinstated.

One way of using vital statistics which has not been granted due attention is the possible use of simulation exercises. Using simulation, it would be possible to provide answers to a wide range of hypothetical questions. For example, it would be possible to estimate the effect on fertility of an increase or a decrease in the abortion rate, or in the rate of cohabitation, or the divorce rate. Simulation would also provide guidelines for the long-range effects of current low levels of fertility on future pension and retirement plans. It is hoped that the use of simulation exercises in assessing the causes and consequences of changes in fertility will be more fully explored.

Generating Fertility Data

One strategy for generating additional fertility data would be to expand the questions which are now asked on the census. However, even in the unlikely event that additional questions could be posed and additional funds could be found, the census format does not lend itself to the detailed and often subjective questions needed to assess fertility aspirations and motivations (p. 61). An ideal instrument for assessing present fertility in Canada, and for predicting its future course, would be a national fertility survey. Unfortunately, such a survey would require extensive funding, and attempts to formulate appropriate proposals have not been successful (p. 62). Faced with these dilemmas, workshop participants focused on two modest but more practical alternatives: a special purpose survey and a piggy-back questionnaire added to the existing Labour Force Survey.

A small scale survey, involving perhaps 6,000 respondents, could be conducted by Statistics Canada to collect data specifically relevant to the concerns of demographers. Such a survey might have a set of core items involving fertility and fertility intentions, plus a rotating agenda to allow researchers to examine a variety of related issues in depth (p. 63).

The on-going Labour Force Survey would provide a very useful and relatively inexpensive vehicle for the collection of fertility data (p. 65). Several specific strategies were suggested. One simple and pragmatic alternative would be the addition of a supplementary questionnaire either administered by labour force interviewers, or merely dropped off by them and then either collected by interviewers or mailed in by respondents. One satisfactory strategy would be a survey every three years, with both a panel of continuing persons to assess longitudinal changes over time, and a sample of new persons to assess new trends (p. 65). Alternatively, fertility questions might be administered only to the one-sixth of the sample rotated out of each survey (p. 65).

The content and wording of questions to be included on a labour force survey supplement is critical; although such questions must be succinct and must cause minimum disruption to the original survey, they must also yield data of maximum relevance for the nine content areas outlined as research priorities (p. 67). If a labour force survey vehicle is deemed feasible, it is suggested that an **ad hoc** committee of demographers be struck to formulate the specific questions to be asked.

CHAPTER SEVEN

EPILOGUE: SOME SOCIAL POLICY ISSUES

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The fertility situation in Canada can be summarized succinctly: in the recent past, the fertility rate has declined steadily to a very low level where it has apparently stabilized; that low level is below the level of replacement and has been so for some time; and at present there are no immediate reasons to anticipate a change in either of these circumstances. These fertility facts suggest three related questions. First, what are the consequences of low fertility for the society? Second, what kinds of intervention are possible? Third, if intervention is possible, should it be attempted?

Low Fertility and Replacement

The most dramatic consequence of low fertility is that in Canada it has for some time been below the level of replacement. At its most basic level, the primary implication is quite simple: "Do we wish socially to maintain a level of fertility that will at least allow us to reproduce ourselves? (Lapierre-Adamcyk).

One rationale for maintaining a pronatalist perspective is by Henripin: "If fertility remains at its current level (and it is possible it will decline even further), **Canadian society will disappear.**" (Henripin, emphasis mine). This interpretation is open to serious question. In all likelihood, it is not Canadian society *per se* which is in any danger of disappearing, but the kind of Canadian society which might be projected into the future if it were to consist only of the descendants of persons who are currently Canadian.

Canadian society today involves a large number of immigrants. In 1971, Canada had more than five million families; of these, more than one in five (22.7%) were headed by a person born outside of Canada (Statistics Canada, 1971 Census of Canada, Catalogue 93-719), Table 55 and Catalogue 93-722, Table 68). If in fact Canadian fertility were to remain too low to replace the current populations with their direct descendants, it is quite possible, indeed probable, that it may need to find alternative sources of population replenishment from other countries.

The Aging of Canadian Society

A significant consequence of the decline in the birth rate will be the aging of the Canadian population. Continuation of this trend may challenge current social and political expectations regarding retirement and old age security. Changing age distribution will have major effects on our health care systems, and strong impact on educational institutions and the

educational process (Wilk). Persons over 65 will represent a growing proportion of the population, involving at least 12% by the turn of the century (Shulman, 1980:34). At the macro level, the major need for children is to ensure that in the foreseeable future the denominator of the dependency ratio is appropriately large. If the birth rate remains low, who will pay for the costs necessitated by an aging population? (Lux).

Of particular concern to the problem of aging is the prospect of pensions. Pensions are drawn mainly not from past saving, but from current production. To the extent that this is true, the demographic distribution of the population becomes crucial (Krotki). For example, given a fertility level of 1.7 children, the cost of maintaining a reasonable retirement system would be something between 15% and 20% of income paid in contributions (Henripin).

One school of thought contends that it is not the absolute level of fertility which is critical, but rather the extent to which levels of fertility fluctuate. In the present situation, where a relatively large cohort of women are having relatively few children, there is a situation of extremes created in terms of numbers of children, with the result of an undue strain first, on educational institutions, then, on the labour market, and then, on facilities for the aged. The absolute level may be less important than the maintenance of the level within certain boundaries (Grindstaff). In this perspective, appropriate social policy might try to "iron out" the extremes, and to encourage or to discourage fertility so as to minimize these strains.

Manipulating Fertility: The Politics of Natalism

Antinatalist strategies are those which have the intent of decreasing fertility; pronatalist strategies are those which have the intent of increasing it. While changes in fertility rates could be readily observed it is less obvious that they occurred because of specific social policies rather than for other reasons. Some observers conclude that the track record of fertility control is not overly impressive: policies either do not work or work too well, perhaps exacerbating the very fluctuations they were supposed to quell (Collishaw). In France in the 1930s, efforts to increase fertility were short lived (Krotki) and did not seem to have made too much difference (Collishaw). In Romania in 1967, a radical change in the laws concerning contraception and abortion did produce a baby boom, which will soon be hitting the labour market with unfortunate results (Krotki) (Teitelbaum, 1972). Demographers are not in agreement on the actual effects of natalist policies in either direction. As one observer noted, in discussing pronatalism and its antithesis, it is easy to drift "into the kind of mega theory where God Almighty moves" (Krotki).

Antinatalist Strategies. Most demographers have spent most of their careers concerned, directly or indirectly, with how people can be prevented from having too many children. In the past antinatalist policies have had a wide basis for appeal, and in many instances they continue. At the macro level, the population explosion created drastic consequences from too rapid population growth, and threatened to become a population bomb, especially in the developing world. At the micro level, the family planning movement, under leaders such as Margaret Sanger, sought to free women from the "tyranny of pregnancy." The deleterious sequela from unplanned and unwanted births lead professionals concerned with mental health to support the ideal of "every child a wanted child." The humanistic goal of freedom of choice regarding conception and birth is relevant, perhaps crucial, to the well-being of the individual (Beaujot). The discipline has attached a great deal of importance to the means by which undesired children can be avoided (Henripin). In terms of antinatalist policies, demography has made many valuable contributions concerning attempts to improve birth control effectiveness and to widen the use of contraception and sterilization.

Successful antinatalist policies seem to have been those with maximum relevance to the individual, with minimum dependence upon global concerns. For example, in the 1976 Quebec survey, women who were asked about factors such as the deterioration of the environment, the use of non-renewable resources, or the problem of too rapid population growth, did not indicate that such issues were of significant concern in their fertility decision making (Lapierre-Adamcyk). Although younger persons might have more involvement in such issues, it seems likely that such factors may serve as supportive rationales for the decisions already made, rather than acting as important causes in and of themselves.

Pronatalist Strategies. The overwhelming concern with limiting population has left demographers little time to consider the opposite side of the coin, namely how to bolster pronatalist sentiments. It seems certain that low fertility is here to stay, and that in itself presents no problem. What is problematic is that fertility may remain so low that the replacement level is not achieved. It is not necessary to organize society so that fertility is high: it may be necessary to reorganize it so that fertility is not too low to preclude survival (Lapierre-Adamcyk). Given declining birth rates, in the coming years, the discipline may well be asked to suggest ways in which situations may be created wherein additional children are desired, a possibility that has been "completely ignored" by demographers.

From one perspective, procreation is a social function. It involves an area of investment in the future, and as such demands some short-range sacrifice for long-range benefits. In the past, the willingness or reluctance of women to bear children was largely irrelevant: pregnancies were biological happenstances to be managed as well as possible. With the advent of the birth control revolution, however, and with it the advent of choice, it becomes clear that women will elect to have fewer and fewer children -- to a point below the level of replacement. The perceived need for increased fertility poses a basic dilemma: how can we resolve the public needs for more children with the private needs of women to pursue goals other than motherhood? (Romaniuc).

Pronatalist policies need to recognize that the altruism of individuals, including potential mothers, may be limited. The present need may be for women of 20 to have children to forestall aging of the population and to benefit themselves when they are 40, or more accurately when they are 60. Even if young women could be convinced of that argument, the trade-off of present circumstances for future gain is not very appealing, especially since it is indirect, abstract, and 40 years in the future (Beaujot).

In the short range, how might women be persuaded to have more children? Two over-all strategies come to mind: one might make children more appealing, or one might lessen their social and economic costs. It seems hard to improve on religion and the media in presenting parenthood as natural and inevitable, and children as intrinsically desirable. One scenario might encourage a minority of women to have many children, leaving most women "free" to pursue the alternative goals of work and career (Romaniuc). In realistic terms, however, it seems unlikely that large portions of the population would elect to remain childless: a fundamental interest in parenting remains, although it is an interest apparently restricted to small numbers (Lapierre-Adamcyk). The "problem" is not a reluctance to have **any** children, but a reluctance to have **many**.

If the model of either motherhood or career is not appealing to most people, the problem remains to reconcile the need for gainful employment with the need for children. There is a need for studies of the circumstances under which both goals may be maximized (Romaniuc). The problem of the future will be to convince a certain proportion of the population to have a third child (Henripin). Appropriate strategies would seem to be in the direction of making motherhood easier.

The most demanding period of child-care, the early years, has traditionally been almost exclusively a female domaine. To a large extent, parenting has implicitly referred to mothering. One way to lessen the burden and make childrearing more appealing, may be to increase the participation of fathers, including the care of young children. "In the past, women were slaves of family life, while men were largely left out of the experience of raising children, and benefiting from the resulting emotional exchanges" (Lapierre-Adamcyk). If indeed fertility is low because women perceive that children limit their other life choices, then to increase fertility we need to structure institutions so that child-care responsibilities are shared. Although difficult to achieve, or research, politically this strategy is most important if we want to achieve higher fertility (Grindstaff).

As women continue to become more and more involved in the labour force, they continually come up against the question of child-care services. To what extent does the existence of child-care alternative affect the decision to enter the labour market, or to remain in it? This is not known, but possibly if child-care service is not provided, this may possibly lead to a downward push on the fertility level (MacLeod).

In economic terms, the cost of a child is very high, involving over a lifetime an expenditure of two or three times a family's annual income. Given this high cost, it does not seem surprising that the payments of family allowances are not in themselves effective in encouraging motherhood. In 1976, when Quebec women were asked about responses to an increase in family allowance, many persons did not believe that allowances had been increased, and only 1% or 2% indicated that it may have been a factor in allowing them to have another child (Lapierre-Adamcyk).

Overall, the effectiveness of pronatalist measures does not seem very high (Krotki). In the Quebec surveys, respondents were given a series of pronatalist strategies (such as family allowances, child scholarships, day-care centres) and asked to choose which ones would most improve their quality of life. Financial services drew the most spontaneous response, but when later asked if that factor was the "most important" in their decision to have another child, very few replied in the affirmative. When respondents were asked if they would have another child if all the pronatalist measures were implemented, the positive response was greater, but would have resulted in an over-all increase in fertility of between 8% and 15% (Lapierre-Adamcyk).

Once persons have as many children as they themselves want, it may be very difficult to persuade them to have more. For example, in Quebec women who had what they felt to be a sufficient number of children (then, an average of about 2.5), indicated that regardless of the services which might be made available to them, they would not want another child under any circumstances (Lapierre-Adamcyk).

Fertility and Social Policy

Changing fertility rates have widespread social and political implications. Their description inevitably leads to the question of whether or not attempts should be made to encourage or discourage reproduction. From an academic perspective, concern is generally expressed for the importance of good theoretical models before attempts are made at change. "Policy should come after you know the variables that are necessarily involved, otherwise you make policy in a vacuum" (Grindstaff). The academic priority is usually to understand, and therefore to explain (MacLeod). In this context, it is not enough to know what the major variables are, it is also important to know what specific consequences would accrue if they were to be changed. For example, what would be the consequence on the fertility rate of a sudden restriction of access to abortion? (MacLeod). If women's low fertility is facilitated by their employment opportunities what would be the consequences of "draconian" measures which might significantly restrict their access to the labour market?

One contention is that: "you must understand the dynamics of change before it is possible to implement a policy" (Grindstaff). Unfortunately, this is not strictly true. One may contend that one **should** understand the dynamics before you make a policy in order to have the desired effect, but in fact policies can be and are being made all the time without the "requisite" understanding. The question remains who should be involved and at what level. Not all demographers subscribe to the ethic of value neutrality in science. One view is that demographers as demographers are in a better position than others to be aware of dangerous or undesirable population trends, and that they therefore should commit themselves to sensitizing others to these circumstances. Given that the Total Fertility Rate has been below replacement level for a decade, some feel it may be time to make a commitment to reaching the replacement level. In this perspective, the role of the demographer citizen should be to take a stand and to alert fellow citizens (Lux).

Although some researchers advocate pronatalist policies, the dominant view is that it is not appropriate for demographers, or for researchers in general, to propose either pronatalist or antinatalist policies: it is,

however, incumbent upon them to enlighten those who must make such decisions (Henripin). Although scientists have a responsibility to develop and to communicate the understandings, insights, and objective data necessary for informed debate, sensible policy judgements, and democratic political choices, it is **not** the job of scientists as scientists to make policy decisions or political choices (Wilk). There is a clear consensus that the appropriate role of Statistics Canada in fertility policy making is the neutral one of providing to decision makers the best possible descriptions and predictions of fertility in Canada (Fellegi). Demographers need to "sharpen their craft" (Collishaw) in order to project future fertility with some accuracy and suggest means of coping with those emerging eventualities, either by adjusting institutions accordingly, or by taking more-or-less effective means to alter the rate or direction of change (Henripin).

To reiterate: all of the available data seem to indicate that, although fertility rates show minor fluctuations, in general low fertility is here to stay. Whether or not one sees the advantages at the present time there do not seem to be any obvious measures, draconian or otherwise, which are likely to cause a significant upsurge in fertility. It follows that the attention of policy makers therefore might best be directed towards an understanding of the implications of a low-growth or no-growth population; and the attention of researchers might best be directed to describing as accurately as possible the current situation, and to predicting as precisely as possible the (low) rates of fertility which are likely to occur in the immediate future.

ACADEMIC PARTICIPANTS

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SELECTED BIBLIOGRAPHY*

Adams, O.B. and D.N. Nagnur

- 1981 *Marriage, Divorce and Mortality: A Life Table Analysis for Canada 1975-1977*. Ottawa: Statistics Canada, Health Division, Catalogue 84-536.

Arnold, Fred et al.

- 1975 *The Value of Children: A Cross-national Study*. Honolulu: University of Hawaii Press.

Balakrishnan, T.R., J.F. Kantner, and J.D. Allingham

- 1975 *Fertility and Family Planning in a Canadian Metropolis*. Montreal and London: McGill-Queen's University Press.

Balakrishnan, R.R., G. Edward Ebanks and Carl F. Grindstaff

- 1979 *Patterns of Fertility in Canada, 1971*. Ottawa: Statistics Canada.

Beaujot, R.P., K.J. Krotki and P. Krishnan

- 1978 "Socio-cultural variations in the applicability of the economic model of fertility", *Population Studies* 32 (2): 319-325.
- 1982 "Analysis of ethnic fertility differentials through the consideration of assimilation," *International Journal of Comparative Sociology* (forthcoming).

Berelson, B.

- 1979 "Romania's 1966 anti-abortion decree: the demographic experience of the first decade," *Population Studies* 33 (July): 209-222.

Britton, M.

- 1979 *Birth Intervals and Family Building Patterns*. Population Trends 18, HMSO, London.

* The selected bibliography includes only those works which were specifically mentioned in the discussions. It does not purport to be representative of the field, and does not systematically include the published works of participants.

Bumpass, Larry

- 1973 "Is low fertility here to stay?" *Family Planning Perspectives* 5 (Spring): 67-79.

Butz, William P. and Michael P. Ward

- 1979a "*The emergence of countercyclical U.S. fertility*," *American Economic Review* 69 (June): 318-328.
- 1979b "*Baby boom and baby bust: a new view*," *American Demographics* 1 (July-August): 11-17.
- 1979c "*Will U.S. fertility remain low? A new economic interpretation*," *Population and Development Review* (December): 663-688.

Coombs, Lolagene C., and Ronald Freedman

- 1979 "*Some roots of reference: roles, activities, and family values*," *Demography* 16 (3): 359-376.

Denton, Frank T., and Byron G. Spencer

"Canada's population and labour force: past, present and future," Pp. 10-26 in Victor Marshall (ed.) *Aging in Canada*. Don Mills: Fitzhenry and Whiteside.

Dunnell, K.

Family Formation 1976. HMSO, London.

Easterlin, Richard A.

- "The American baby boom in historical perspective,"*
American Economic Review 51: 869-911.
- 1969 "*On the relation of economic factors to recent and projected fertility*," *Demography* 3: 131-153.
- 1978 "*What will 1984 be like? socio-economic implications of recent twists in age structure*," *Demography* 15 (November): 397-432.

Glick, Paul C. and Arthur J. Norton

- 1977 "*Marrying, divorcing, and living together*," *Population Bulletin* 32 (5).

Goldscheider, Calvin

- 1971 *Population, Modernization, and Social Structure*. Boston: Little, Brown and Co.

Grindstaff, Carl E.

- 1975 "The baby bust: changes in fertility patterns in Canada," *Canadian Studies in Population* 2: 15-22.

Henripin, J. and E. Lapierre-Adamcyk

- 1974 *La Fin de la Revanche des Berceaux. Qu'en Pensent les Québécoises?* Montréal: Les Presses de l'Université de Montréal.

**Henripin, J., P.M. Huot, E. Lapierre-Adamcyk,
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- 1981 *Les Enfants qu'on n'a plus au Québec*. Montréal: Les Presses de l'Université Montréal.

Jones, Landon Y.

- 1980 *Great Expectations: America and the Baby Boom Generation*. New York: Coward, McCann and Geoghegan.

Kalbach, Warren E. and Wayne W. McVey

- 1971 *The Demographic Bases of Canadian Society*. Toronto: McGraw Hill.

Kitagawa, Evelyn M.

- 1981 "New life styles: marriages patterns, living arrangements, and fertility outside of marriage," *Annals* 453 (January): 1-27.

Lapierre-Adamcyk, Evelyne

- 1981 "Les aspirations des Québécois en matière de fécondité en 1980," *Cahiers Québécois de démographie* 10 (décembre).

Marshall, Victor W. (editor)

- 1980 *Aging in Canada*. Don Mills, Ontario: Fitzhenry and Whiteside.

McVey, Wayne W. Jr., and Barrie W. Robinson

- 1981 "Separation in Canada: new insights concerning marital dissolution," *Canadian Journal of Sociology* 6 (3): 353-366.

Nagnur, D.N.

- 1981 *Vital Statistics Year-End Quarterly, October-*
- 1980 *December, 1977, 1978, 1979 and 1980.* Ottawa:
- 1979 Statistics Canada. Catalogue 84-001
- 1978

Nagnur, D.N., S.G. Currie, and B. Heath

- 1981 *Quality Assessment of Vital Statistics: A Pilot Study.*
Ottawa, Ontario: Statistics Canada Health Division,
Minister of Supply and Services Canada.

Newcombe, Howard B.

- 1966 "Present state and long-term objectives of the British
Columbia population study," Pp. 291-313 in James F. Crow
and James V. Neel, *Proceedings of the Third International
Congress of Human Genetics.* Baltimore, Maryland: The
Johns Hopkins Press.

Newcombe, Howard B. and Martha E. Smith

- 1970 "Changing patterns of family growth: the value of linked vital
records as a source of data," *Population Studies* 24 (July):
193-203.

Norland, J.A.

- 1981 "Estimating the number of common-law unions via the 1976
Census of Canada: Interm Report #1." Ottawa, Ontario:
Statistics Canada, Demography Division, Private
communication.

Romaniuc, A.

- 1980 "Increase in natural fertility during the early stages of
modernization: evidence from an African case study, Zaire,"
Population Studies 34 (July): 293-310.
- 1981 "Increase in natural fertility during the early stages of
modernization: Canadian Indians case study," *Demography*
18 (May): 157-172.

Ryder, Norman

- 1979 "The future of American fertility," *Social Problems* 26
(February): 359-369.

Shulman, Norman

- 1980 "The aging of urban Canada," Pp. 27-34 in Victor Marshall
(ed.) *Aging in Canada.* Don Mills: Fitzhenry and Whiteside.

Smith, Martha E.

- 1977 *"The use of computers for studying the origins and social costs of ill health,"* Pp. 37-41 in Shires and Wolf (editors)
MEDINFO 77.

Statistics Canada

- 1971 *Families, Family Characteristics by Type, Schooling, and Age of Head.* Catalogue 93-719.

Immigrant Families, Catalogue 93-722.

Teitelbaum, Michael S.

- 1972 *"Fertility effects on the abolition of legal abortion in Romania,"* Population Studies 26 (November): 405-417.

Travato, Frank and Thomas K. Burch

- 1980 *"Minority group status and fertility in Canada,"* Canadian Ethnic Studies 12 (3): 1-18.

Udry, J. Richard

- 1971 *The Social Context of Marriage* (Revised edition). New York: J.B. Lippincott.

Van de Walle, Etienne and John Knodel

- 1980 *"Europe's fertility transition: new evidence and lessons for today's developing world,"* Population Bulletin 34 (6):

Veevers, J.E.

- 1972 *"Factors in the incidence of childlessness in Canada: an analysis of census data,"* Social Biology 19 (September): 266-274.
- 1977 *The Family in Canada.* 1971 Census Profile Series, Catalogue 99-725, Volume V, Part 3 (Bulletin 5.3-3). Ottawa: Information Canada.

Williamson, Nancy E.

- 1978 *"Boys or girls? Parents' preferences and sex control,"* Population Bulletin 33 (January): 1-35.

Westoff, Charles F.

- 1978 *"Marriage and fertility in the developed countries,"* Scientific American 239 (December): 51-57.

Wood, W.D. and Pradeep Kumar

- 1977 *The Current Industrial Relations Scene in Canada 1977.*
Kingston, Ontario: Industrial Relations Center, Queen's
University.

Zelnik, Melvin and John F. Kantner

- 1977 "Sexuality and contraceptive experience of young unmarried
women in the U.S.," *Family Planning Perspectives* 9 (March-
April): 55-71.
- 1979 "Probabilities of intercourse and conception among U.S.
teenage women 1971 and 1976," *Family Planning*
Perspectives 11 (May-June): 177-183.



